STP/HYDROGRAPHIC OBSERVATIONS ALONG LINE P, STATION P, LINE R AND ASSOCIATED LINES AND IN THE "OCEAN STORMS" AREA:

CRUISE I – 22 SEPTEMBER - 16 OCTOBER, 1987

CRUISE III – 24 NOVEMBER - 9 DECEMBER, 1987

by

S. Tabata, L.A.F. Spearing, R.H Bigham, B.G. Minkley,
J. Love, D. Yelland, J. Linguanti and P.M. Kimber

Institute of Ocean Sciences
Department of Fisheries and Oceans
Sidney, B.C. V8L 4B2

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Canad

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ABSTRACT

Tabata, S., L.A.F. Spearing, R.H. Bigham, B.G. Minkley, J. Love, D. Yelland, J. Linguanti and P.M. Kimber. 1988. STP/Hydrographic Observations along Line P, Station P, Line R and Associated Lines and in the OCEAN STORMS Area: Cruise I -- 22 September - 16 October 1987 and Cruise III -- 24 November - 9 December 1987. Can. Data Rep. Hydrogr. Ocean Sci. 70: 134 pp.

This report presents a compilation of oceanographic observations, mainly STP/Hydrographic data observed during the two cruises of Line P, Station P, Line R and associated Lines and the OCEAN STORMS area during 22 September - 16 October and 24 November - 9 December 1987.

Key words: STP/Hydrographic data; Northeast Pacific Ocean; OCEAN STORMS

RESUME

Tabata, S., L.A.F. Spearing, R.H. Bigham, B.G. Minkley, J. Love, D. Yelland, J. Linguanti and P.M. Kimber. 1988.
STP/Hydrographic Observations along Line P, Station P, Line R and Associated Lines and in the OCEAN STORMS Area: Cruise I -- 22 September - 16 October 1987 and Cruise III -- 24 November - 9 December 1987. Can. Data Rep. Hydrogr. Ocean Sci. 70: 134 pp.

Dans le présent rapport, les auteurs rassemblent des observations océanographiques, principalement des données hydrographiques et de STP, faites lors de deux expéditions effectuées le long de la ligne P, à la station P, le long de la ligne R et des lignes connexes et dans le secteur des TEMPÊTES OCÉANIQUES du 22 septembre au 16 octobre et du 24 novembre au 9 decembre 1987.

Mots-clés: données hydrographiques/ de STP; nord-est de l'océan Pacifique; TEMPÊTES OCÉANIQUES.

INTRODUCTION

As part of the ocean climate studies conducted at the Institute of Ocean Sciences, Line P, Station P, Line R, and associated lines are occupied at approximately seasonal intervals to monitor the interannual variability of ocean conditions in the northeast Pacific Ocean. Data from regular oceanographic cruises are available for Station P since 1956; Line P since 1959; Line R since 1981.

The OCEAN STORMS project is primarily a joint U.S. - Canada initiative. The U.S. participants are: Scripps Institution of Oceanography, Applied Physics Laboratory, Department of Oceanography and Department of Atmospheric Sciences of the University of Washington, College of Oceanography of the Oregon State University, National Center for Atmospheric Research, Pacific Environmental Laboratories of NOAA, Jet Propulsion Laboratory of the California Institute of Technology, Chesapeake Bay Institute of the Johns Hopkins University and the National Weather Services of NOAA. One French institute, the Infremer/Centre de Brest, is also represented. The Canadian contributors are the Institute of Ocean Sciences (Department of Fisheries and Oceans), the Atmospheric Environment Service (Department of the Environment), and the Department of Oceanography of the University of British Columbia. A description of the OCEANS STORMS project (goals, objectives, tasks, etc.) can be found in a report prepared by D'Asaro (1985).

In order to fulfill the requirements of the above two studies three oceanographic cruises were scheduled by the Institute of Ocean Sciences for the autumn - winter 1987. There were three cruises: Cruise I (Local designation 87-2) (22 September - 16 October 1987), Cruise II (87-3) (22

October - 10 November 1987) and Cruise III (87-4) (24 November - 9 December 1987). (The depths (m) and coordinates of OCEAN STORMS project are shown in Table 1).

The oceanographic data presented in this report comprise the salinity-temperature-pressure (STP)/hydrographic data and other supplementary data such as sea surface salinity. Only the data for Cruise I and III will be reported. Those for Cruise II are reported separately by W. Crawford and A.E. Gargett of the Institute of Ocean Sciences (Crawford and Gargett, 1988).

OBSERVED DATA

Cruise I (Fig. 1 and 2)

On account of good weather most scheduled observations were made during Cruise I. A total of 117 STP and 8 hydrographic casts were obtained, of which 34 STP's and one hydrographic cast were taken in OCEAN STORMS area. STP temperature/salinity profiles were observed with Guildline 8705 Digital STP probe/87102 Deck Control Unit. The transparency data were obtained with Sea Tech Transmissometer attached to the STP probe. Hydrographic casts were made by the use of Niskin sampling bottles, each fitted with two protected reversing thermometers. For samples at depth ≥ 200m a single unprotected reversing thermometer was also attached to each bottle. Salinities (in duplicate) were determined with Guildline 8400 AUTOSAL salinometer at I.O.S. The dissolved oxygen content was determined aboard the ship using a modified Winkler method (Carpenter, 1965).

The ship has an independent seawater loop system designed to provide continuous (in practice, logged every 2 minutes) temperature and salinity readings from a depth of approximately 3 metres (m). The time/date, ship's position and meteorological data (air temperature and true wind velocity) are recorded as well. Samples may also be drawn from this system and analyzed for salinity using AUTOSAL salinometer. Salinities observed from this system are considered to represent those of the upper mixed layer quite well (Tabata, 1978).

For calibrating STP values, we used comparable data from hydrographic casts, special calibration samples (sampling bottles placed a few metres above the STP sensor, usually at 1500 decibars) and, in the case of salinity in the upper mixed layer, the 3-metre sample from the ship's seawater loop system. STP temperatures were found to be nearly identical to those obtained from hydrographic casts and calibration samples (STD temperatrue minus that from hydrographic/calibration cast = +0.003 (standard deviation = ± 0.050°C). Therefore, no correction is applied to STP temperatures. On the other hand, an examination of difference of salinities (STP salinities minus that obtained by other methods) (Fig. 3) suggested that there could have been a slight instrumental drift during Cruise I. Corrections to STP salinities were accomplished as follows:

First few days of observations (Stations P01 to P14):

Subtract 0.016°/oo from observed STP salinities.

For bulk of observations during 26 September to 12 October (Stations P15 to R06:

Subtract 0.047°/oo

For last few days of observations (Station J05 to A00):

Subtract 0.081°/oo

The abridged cruise report and log of oceanographic observations for this cruise is shown in Appendix I and II, respectively.

Cruise II

Reported by W. Crawford and A.E. Gargett (1988).

Cruise III (Fig. 4 and 5)

This cruise was plagued by the occurrence of persistent gales and storms with wind speeds reaching as high as 75 knots. As a consequence less than one half of the scheduled number of stations were occupied. Only 32 STP's and 3 hydrographic casts were made. Of this, 18 STP's were taken in the OCEAN STORMS area, all in the northern half of the area (Fig. 4). Station OS16 situated at the centre of the area was unoccupied.

The methods used to sample, calibrate and analyse the data are similar to those employed in Cruise I.

Although the same model of Guildline CTD system was used during this cruise as in the earlier two cruises the sensor used this time was different. Presumably, as a consequence of this, the calibration results are different from that of Cruise I. Here, there is a suggestion that the observed temperature/salinity are either pressure (Fig. 6) or temperature dependent (Fig. 7). The least-squares line fitted for temperature/salinity difference versus depth and versus the observed STP temeprature are shown in Fig. 6 and 7, respectively. Since the regression curves using observed STP temperature possessed slightly less scatter, these have been used to reduce the observed STP temperature/salinity to "correct" temperature/salinity.

The abridged cruise report and log of oceanography observations for this cruise is shown in Appendix III and IV, respectively.

DATA PROCESSING

All conductivity data have been converted to salinity using the formula derived by Perkin and Lewis (1980) which has been recommended for general use (Fofonoff and Millard, 1983).

For hydrographic data, the thermometric depth was obtained by the usual "depth difference" method (e.g. Collins et al., 1969). Missing hydrographic data were obtained using a weighted parabolic interpretation method (Reiniger and Ross, 1968). These data are indicated by an asterisk.

Data values which are considered suspect but are included in the printed data set are flagged with a plus sign. These data are not included in the sets at the National Data Centre (Marine Environment Data Service (MEDS), Ottawa.

The data headings and units are as follows:

PRESS: pressure in decibars (db)
TEMP: temperature in degrees Celsius (°C)
SAL: salinity in parts per thousand
DEPTH: depth in metres (m)
SIGMA T: specific gravity anomaly $= (\rho_{T,S,0} - 1)10^3$, where $\rho_{T,S,0} =$ *in-situ* specific gravity of seawater at pressure $= 0$ (i.e. at the sea surface)
SVA: specific volume anomaly ($10^5\delta$, in $10^5 mLg^{-1}$ (or in centilitres ton $^{-1}$)
THETA: potential temperature in °C
SVA (THETA): specific volume anomaly ($10^5\delta$, in $10^5 mLg^{-1}$)

(or in centilitres ton^{-1}) based on a given potential temperature

DELTA D: geopotential anomaly or dynamic height anomaly in J kg^{-1}

POT. EN: potential energy anomaly in 10^8 ergs cm^{-2}

OXY: concentration of dissolved oxygen in mL L^{-1}

SOUND: sound speed in m s^{-1}

Quantities on standard pressures were obtained by employing the interpolation scheme derived by Reiniger and Ross (1968).

The STP data sets do not include any dissolved oxygen content data but frequently contain information upon the optical quality of the water. It gives the percentage of light radiation of wave-length = 6600 nanometers through a 25 cm of path length. In this report the heading "TRANS" is percentage transmission of light.

The task of data processing was conducted by J. Linguanti and data presentation by P.M. Kimber.

All pertinent data collected on these two cruises are on file at the Marine Environmental Data Services Branch (MEDS), Department of Fisheries and Oceans, 1202 - 200 Kent Street, Ottawa, Ontario, Canada, K1A 0E6.

The original STP data containing temperature and salinity at one-metre averages are held at the Institute of Ocean Sciences. So too are the "Serial ASCII Instrumentation Loop" (SAIL) data which comprise sea surface temperature/salinity, ship's position and speed, and meteorological data including wind velocity at 2-minute intervals during the cruise.

PROCESSED DATA

The processed data are shown as follows:

Table 2:	Cruise I:	Sea surface salinity
Table 3:	"	STP data
Table 4:	"	Hydrographic data
Table 5:	Cruise III:	Sea surface salinity
Table 6:	"	STP data
Table 7:	"	Hydrographic data

REFERENCES

Carpenter, J.H. 1965. The Chesapeake Bay Institute technique for the Winkler dissolved oxygen method. Limnol. and Oceanogr., 10, 141-143.

Collins, C.A., R.L.K. Tripe and S.K. Wong. 1969. Programs for processing hydrographic data on an IBM 1130 Computer. Manuscript Rept. Series No. 1071, Fish. Res. Bd. Can., 128 pp.

Crawford, W.R. and A.E. Gargett. 1988. Turbulence and water property observations during the OCEAN STORMS program in the Northeast Pacific, October 22 to November 10, 1987. Can. Data Rep. Hydrogr. Ocean Sci. 68: 140 pp.

D'Asaro, E.A. 1985. Ocean Storms, A three-dimensional severe storm, air/sea interaction experiment; Overview and core program. Manuscript report, Applied Physics Laboratory, University of Wash., Seattle, 98105, 39 pp.

Fofonoff, N.P. and R.C. Millard Jr. 1983. Algorithms for computation of Fundamental Properties of Seawater, UNESCO Tech. Papers in Marine Science, No. 44, UNESCO, Paris, France. 55 pp.

Perkins, R.G. and E.L. Lewis. 1980. The practical salinity scale 1978: Fitting the data. IEEE Jour. Ocean Engineering, OE-5, 9-16.

Reiniger, R.F. and C.K. Ross. 1968. A method of interpolation with application to oceanographic data. Deep-Sea Res., 15, 185-193.

Tabata, S. 1978. An evaluation of the quality of sea surface temperatures and salinities measured at Station P and Line P in the northeast Pacific Ocean. J. Phys. Oceanogr., 8, 970-986.

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Table 1. Approximate depths (m) and positions of stations in OCEAN STORMS area.

STN. NO.	DEPTH (m) APPROX.	LAT. (° 'N)	LONG. (° 'W)
1	4350	48 34.8	141 46.2
2	4280	"	140 57.4
3	4190	"	140 08.7
4	4160	"	139 20.0
5	3980	"	138 31.3
6	4080	"	137 42.6
7	4370	48 02.4	141 44.8
8	4360	"	140 56.4
9	4240	"	140 08.2
10	3760	"	139 20.0
11	3740	"	138 31.8
12	3890	"	137 43.6
13	4430	47 30 0	141 43.3
14	4260	"	140 55.5
15	4260	"	140 07.8
16	4250	"	139 20.0
17	4180	"	138 32.2
18	4200	"	137 44.5
19	4390	46 57.6	141 42.0
20	4260	"	140 54.6
21	4260	"	140 07.4
22	4240	"	139 20.0
23	4230	"	138 32.6
24	4170	"	137 45.4
25	4460	46 25.3	141 40.7
26	4390	"	140 53.8
27	4270	"	140 06.9
28	4280	"	139 20.0
29	4240	"	138 33.1
30	4200	"	137 46.2
16W	4160	47 30.0	139 43.9
16S	4250	47 13.8	139 20.0
16E	4210	47 30.0	138 56.1
16N	4180	47 46.2	139 20.0
16SW	4250	47 26.0	139 26.0
16SE	4250	47 26.0	139 14.0
16NE	4250	47 34.0	139 14.0
16NW	4250	47 34.0	139 26.0

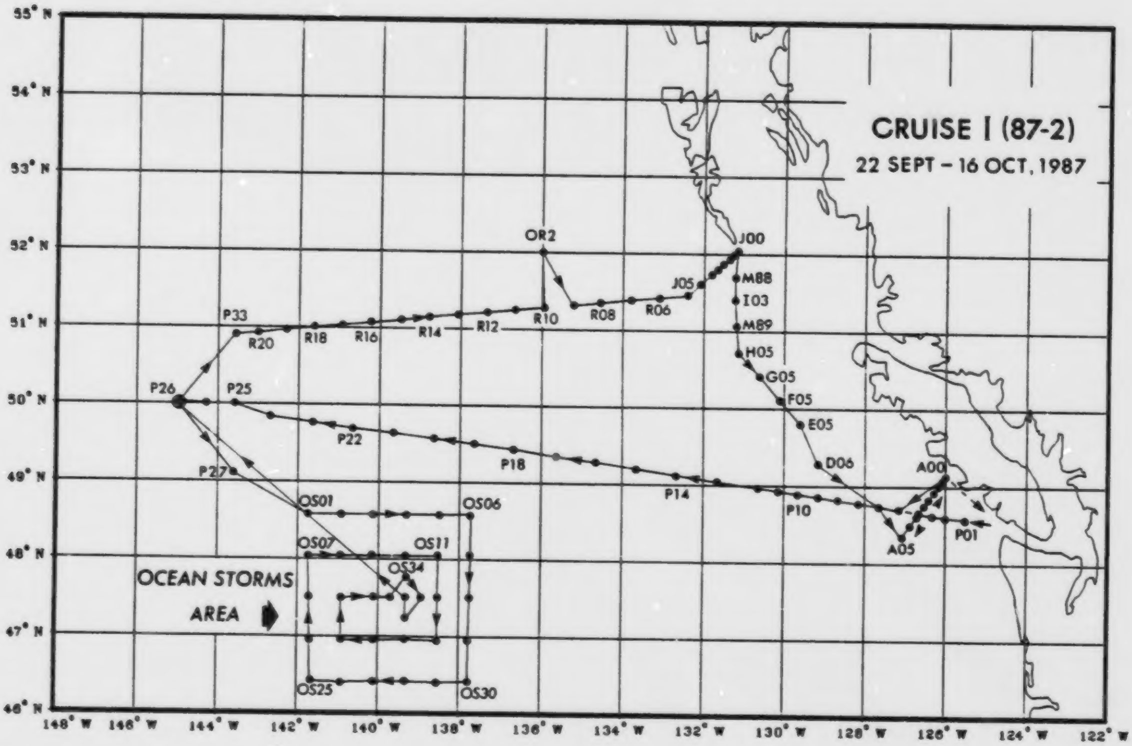

CRUISE I (87-2)
22 SEPT – 16 OCT, 1987
OCEAN STORMS AREA
55° N
54° N
53° N
52° N
51° N
50° N
49° N
48° N
47° N
46° N
148° W
146° W
144° W
142° W
140° W
138° W
136° W
134° W
132° W
130° W
128° W
126° W
124° W
122° W
OR2
J00
J05
M88
I03
M89
H05
G05
F05
E05
D06
A00
A05
P01
P10
P14
P18
P22
P25
P26
P27
P33
R20
R18
R16
R14
R12
R10
R08
R06
OS01
OS06
OS07
OS11
OS34
OS25
OS30

Figure 1. Track chart and location of stations for Cruise I (87-2).

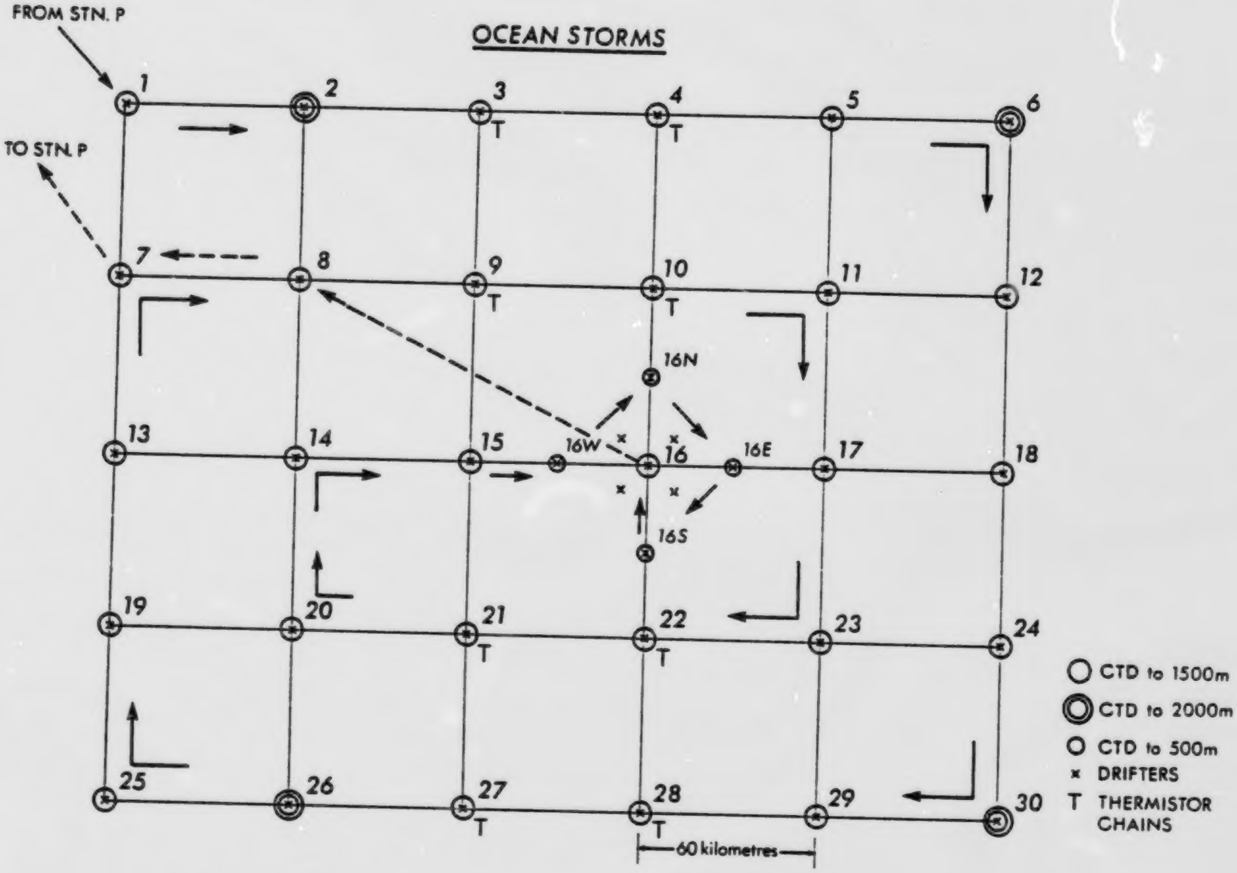

OCEAN STORMS
FROM STN. P
TO STN. P
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16W
16
16E
17
18
16N
16S
19
20
21
22
23
24
25
26
27
28
29
30
T
60 kilometres
CTD to 1500m
CTD to 2000m
CTD to 500m
DRIFTERS
THERMISTOR CHAINS

Figure 2. Detailed track chart and location of stations in OCEAN STORMS area for Cruise I.

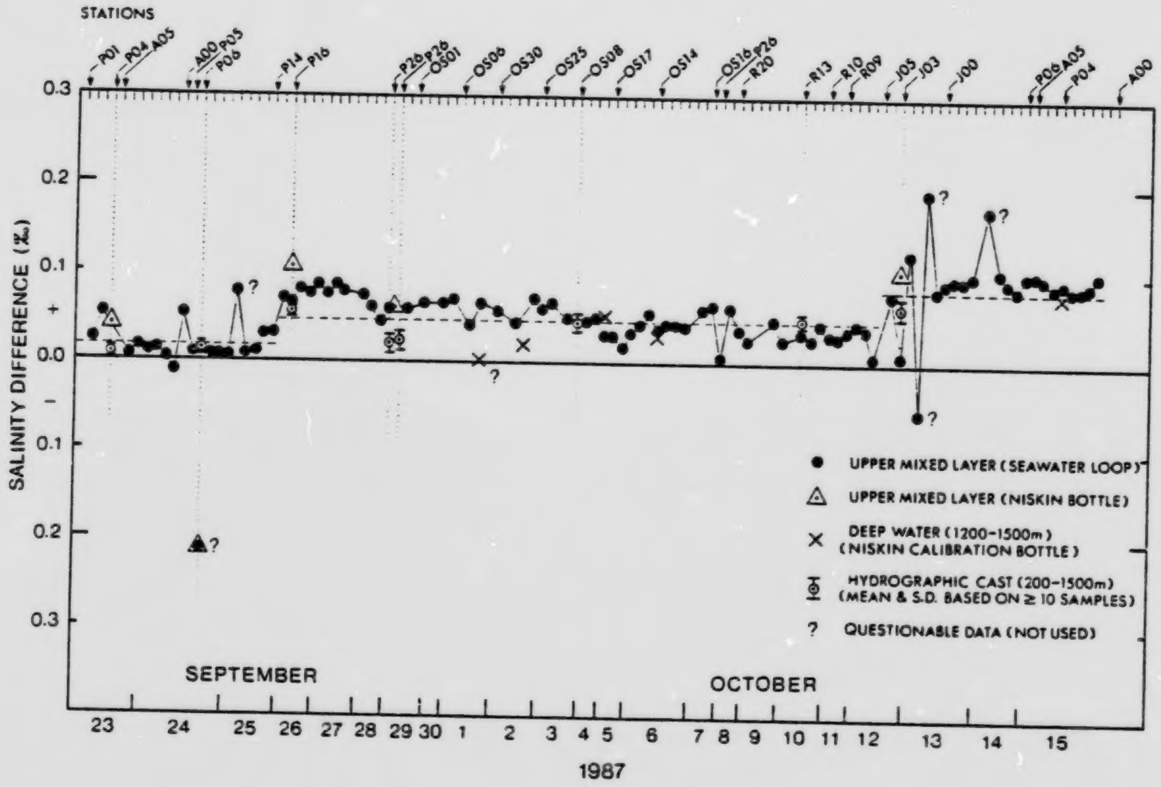


Figure 3. Salinity difference (‰) (STP minus that obtained from corresponding depths with sampling bottles and seawater loop and measured with AUTOSAL salinometer).

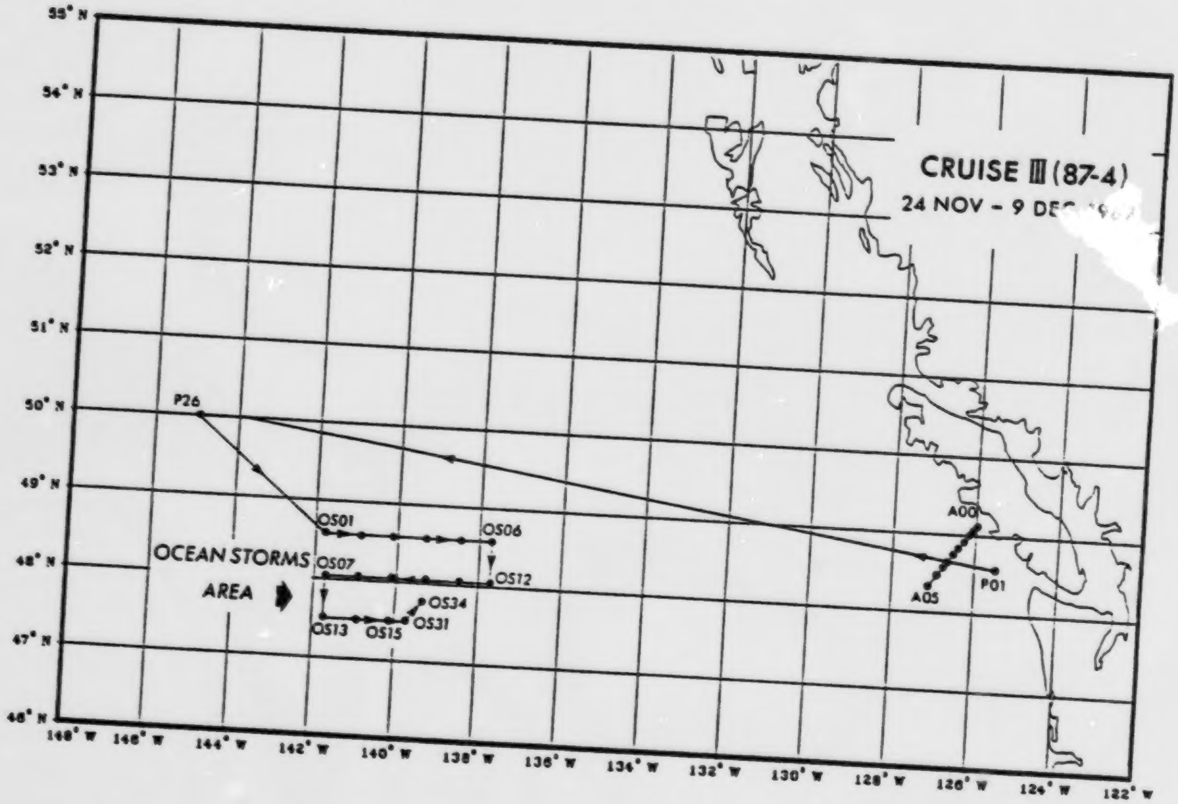

CRUISE III (87-4)
24 NOV – 9 DE
55° N
54° N
53° N
52° N
51° N
50° N
49° N
48° N
47° N
46° N
148° W
146° W
144° W
142° W
140° W
138° W
136° W
134° W
132° W
130° W
128° W
126° W
124° W
122° W
P26
OS01
OS06
OCEAN STORMS
AREA
OS07
OS12
OS34
OS13
OS15
OS31
A00
A05
P01

Figure 4. Track chart and location of stations for Cruise III (87-4).

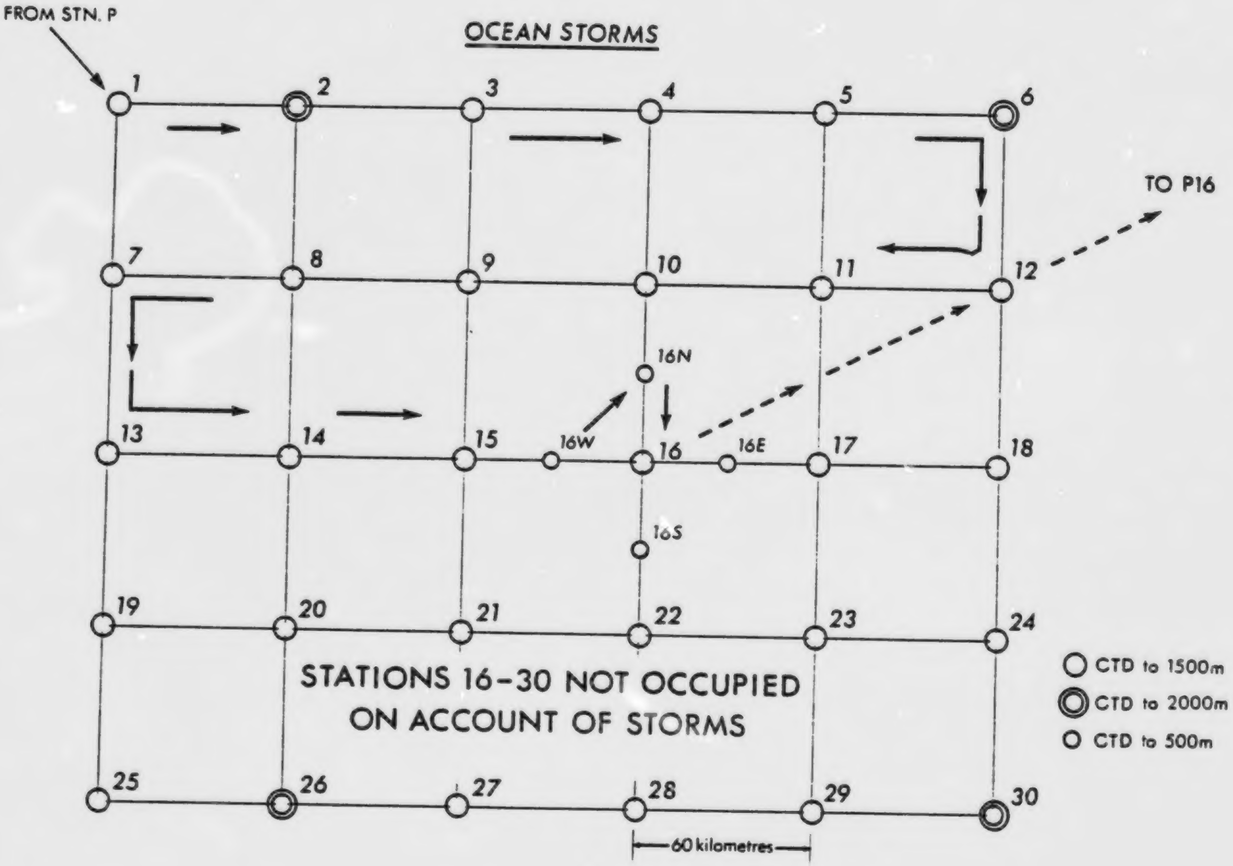

FROM STN. P
OCEAN STORMS
1
2
3
4
5
6
TO P16
7
8
9
10
11
12
16N
13
14
15
16W
16
16E
17
18
16S
19
20
21
22
23
24
STATIONS 16-30 NOT OCCUPIED ON ACCOUNT OF STORMS
CTD to 1500m
CTD to 2000m
CTD to 500m
25
26
27
28
29
30
60 kilometres

Figure 5. Detailed track chart and location of stations in OCEAN STORMS area for Cruise III.

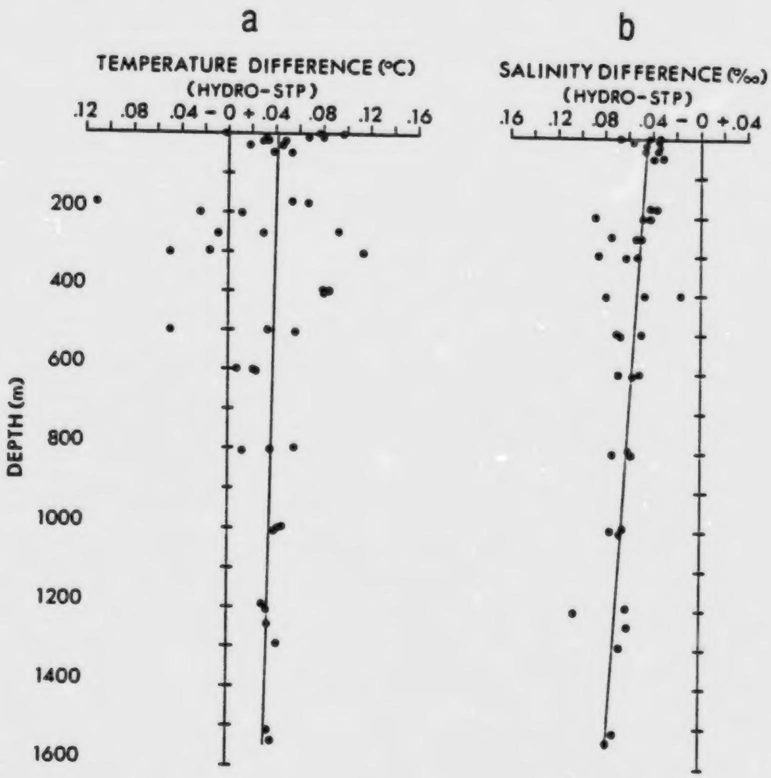


Figure 6 a) Temperature difference (°C) (hydrographic cast-STP) versus depths (m).

b) Salinity difference (‰) (hydro.-STP) versus depth (m).

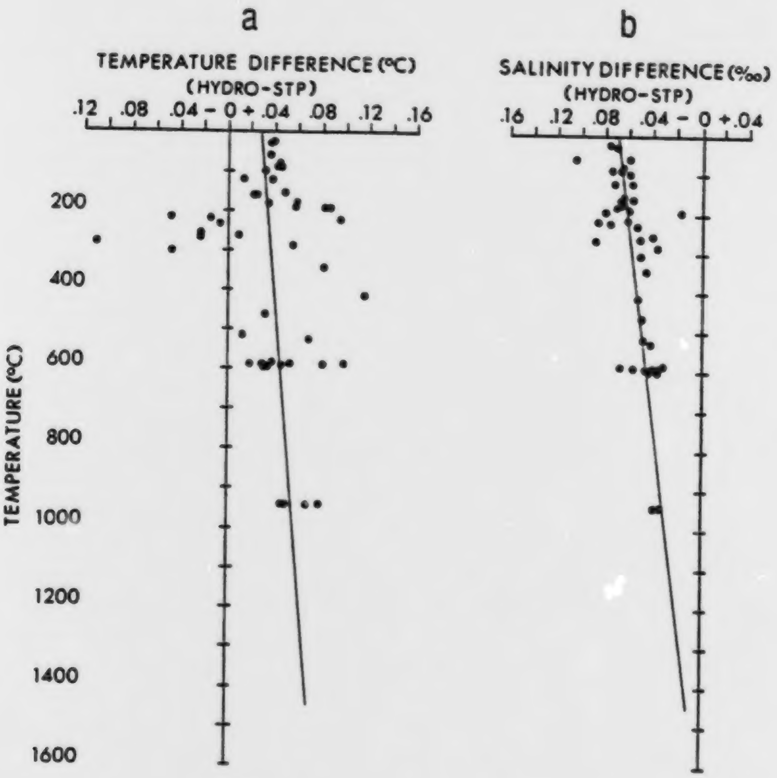


Figure 7 a) Temperature difference (°C) (hydro.-STP) versus observed STP temperature (°C).

b) Salinity difference (‰) (hydro.-STP) versus observed STP temperature (°C).

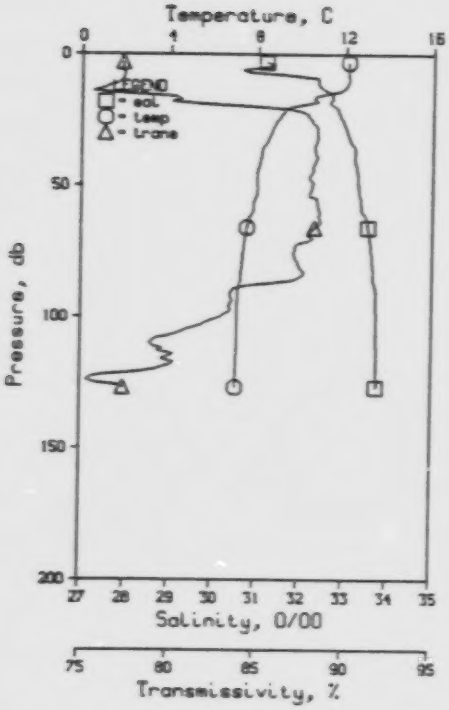
Table 2. Sea surface salinity (3m depth) observed via the sea water loop during Cruise I. (22 September - 16 October 1987).

SURFACE SALINITY DATA CRUISE I (87-2)

STN. NO.	LAT. (° 'N)	LONG. (° 'W)	DATE YR MO DY	TIME (U.T.C)	SALINITY (°/oo)
JF01	48 16.0	123 30.0	87 09 23	00:16	31.751
JF02	48 19.2	124 02.7	87 09 23	02:21	31.584
JF03	48 27.2	124 30.4	87 09 23	03:55	31.515
JF04	48 32.4	125 00.0	87 09 23	05:35	32.162
MP01	48 34.5	125 30.1	87 09 23	07:10	32.324
MP02	48 36.0	126 00.0	87 09 23	09:35	32.418
MP03	48 37.5	126 20.0	87 09 23	11:05	32.105
MP04	48 39.0	126 40.0	87 09 23	23:45	31.787
MA05	48 20.2	127 06.0	87 09 24	03:00	32.377
MA04	48 30.2	126 52.5	87 09 24	05:20	32.270
MA3B	48 36.2	126 44.2	87 09 24	07:10	32.192
MA2B	48 45.2	126 32.0	87 09 24	09:30	32.350
MA02	48 50.2	126 25.3	87 09 24	10:00	32.294
MA1B	48 55.2	126 18.0	87 09 24	11:00	32.155
MA01	49 00.0	126 11.7	87 09 24	11:47	31.989
MA0B	49 03.8	126 05.9	87 09 24	12:30	31.895
MA00	49 08.0	126 00.2	87 09 24	13:09	31.741
MP05	48 39.0	126 40.0	87 09 24	20:00	32.197
MP06	48 44.6	127 40.0	87 09 24	23:00	32.223
MP07	48 46.6	128 10.0	87 09 25	03:30	32.139
MP08	48 49.0	128 40.0	87 09 25	06:51	32.242
MP09	48 51.4	129 10.0	87 09 25	10:03	32.303
MP10	48 53.6	129 40.0	87 09 25	13:00	32.316
MP11	48 56.0	130 10.0	87 09 25	16:00	32.107
MP12	48 58.2	130 40.0	87 09 25	10:04	32.257
MP13	49 02.6	131 40.0	87 09 26	00:10	32.533
MP14	49 07.4	132 40.0	87 09 26	05:17	32.406
MP15	49 12.0	133 40.0	87 09 26	10:40	32.421
MP16	49 17.0	134 40.0	87 09 26	16:08	32.316
MP17	49 21.0	135 40.0	87 09 27	00:16	32.291
MP18	49 26.0	136 40.0	87 09 27	05:44	32.276
MP19	49 30.0	137 40.0	87 09 27	11:08	32.416
MP20	49 34.0	138 40.0	87 09 27	15:58	32.376
MP21	49 37.7	139 40.0	87 09 27	20:50	32.383
MP22	49 42.0	140 40.0	87 09 28	01:37	32.403
MP23	49 46.0	141 40.0	87 09 28	06:07	32.418
MP24	49 50.2	142 40.0	87 09 28	10:30	32.373
MP25	50 00.0	143 36.3	87 09 28	15:03	32.385
MP35	50 00.0	144 18.2	87 09 28	18:50	32.361
MP26	50 00.0	145 00.0	87 09 29	00:35	32.459
MP27	49 06.0	143 36.3	87 09 29	05:26	32.347
OS01	48 34.8	141 46.2	87 09 30	14:28	32.444
OS02	48 34.8	140 57.4	87 09 30	18:52	32.429
OS03	48 34.8	140 08.7	87 09 30	23:23	32.428
OS04	48 34.8	139 20.0	87 10 01	04:15	32.376
OS05	48 34.8	138 31.3	87 10 01	08:40	32.390
OS06	48 34.8	137 42.6	87 10 01	12:29	32.400
OS12	48 02.4	137 43.6	87 10 01	17:06	32.373
OS18	47 30.0	141 43.3	87 10 01	22:15	32.492
OS30	46 25.3	137 46.2	87 10 02	07:39	32.563
OS28	46 25.3	139 20.0	87 10 02	17:31	32.669
OS27	46 25.3	140 06.9	87 10 02	22:30	32.655
OS26	46 25.3	140 53.8	87 10 03	03:55	32.562
OS25	46 25.3	141 40.7	87 10 03	09:10	32.558
OS19	46 57.6	141 42.0	87 10 03	13:10	32.542
OS13	47 30.0	141 43.3	87 10 03	17:21	32.487
OS07	48 02.4	141 44.8	87 10 03	20:45	32.497
OS08	48 02.4	140 56.4	87 10 04	00:50	32.433
OS09	48 02.4	140 08.2	87 10 05	02:30	32.459
OS10	48 02.4	139 20.0	87 10 05	06:45	32.451
OS11	48 02.4	138 31.8	87 10 05	20:08	32.447
OS17	47 30.0	138 32.2	87 10 06	00:58	32.584
OS23	46 57.4	138 32.6	87 10 06	04:57	32.539
OS22	46 57.4	139 20.0	87 10 06	08:45	32.571
OS21	46 57.4	140 07.4	87 10 06	12:38	32.589
OS20	46 57.4	140 54.6	87 10 06	16:54	32.571
OS14	47 30.0	140 55.5	87 10 06	21:08	32.556
OS15	47 30.0	140 07.8	87 10 07	01:25	32.461
OS31	47 30.0	139 43.9	87 10 07	03:47	32.559
OS34	47 46.2	139 20.0	87 10 07	06:00	32.466
OS33	47 30.0	138 56.1	87 10 07	08:14	32.592
OS32	47 13.8	138 20.0	87 10 07	10:47	32.525
OS16	47 30.0	139 20.0	87 10 07	12:47	32.552
MP26	50 00.0	145 00.0	87 10 08	15:59	32.464
MP33	50 54.0	143 34.5	87 10 09	01:54	32.459
MR20	50 55.7	143 01.0	87 10 09	04:56	32.467
MR19	50 58.0	142 20.0	87 10 09	08:25	32.401
MR18	51 00.0	141 39.0	87 10 09	12:25	32.377
MR17	51 02.0	140 56.0	87 10 09	17:03	32.365
MR16	51 03.8	140 12.9	87 10 10	05:42	32.375
MR15	51 06.0	139 30.5	87 10 10	10:20	32.348
MR14	51 09.0	138 47.5	87 10 10	13:53	32.347
MR13	51 11.0	138 06.0	87 10 10	17:36	32.357
MR12	51 13.0	137 23.0	87 10 11	00:33	32.343
MR11	51 15.0	136 40.3	87 10 11	05:14	32.336
MR10	51 17.0	135 57.6	87 10 11	09:08	32.330
MO02	52 00.0	136 00.0	87 10 11	14:43	32.355
MR09	51 19.0	135 15.0	87 10 12	05:31	32.279
MR08	51 21.2	134 32.7	87 10 12	09:17	32.328
MR07	51 23.5	133 49.6	87 10 12	12:51	32.316
MR06	51 25.5	133 06.6	87 10 12	16:30	32.363
MJ05	51 27.5	132 24.0	87 10 12	20:40	32.056
MJ04	51 35.6	132 06.5	87 10 12	23:58	32.039
MJ03	51 43.5	131 50.0	87 10 13	02:28	32.045
MJ2A	51 47.5	131 40.7	87 10 13	05:33	31.935
MJ02	51 51.9	131 31.2	87 10 13	07:20	31.963
MJ1A	51 55.7	131 22.7	87 10 13	09:27	31.840
MJ01	52 00.0	131 14.0	87 10 13	11:22	32.014
MJ00	52 02.0	131 10.3	87 10 13	12:10	32.139
M 88	51 41.7	131 13.7	87 10 14	00:15	31.804
MI03	51 23.2	131 13.9	87 10 14	03:04	31.997
M 89	51 03.2	131 11.2	87 10 14	05:52	31.912
MH05	50 43.0	131 08.3	87 10 14	08:40	31.910
MG05	50 25.0	130 36.5	87 10 14	12:19	31.927
MF05	50 06.0	130 06.7	87 10 14	16:04	32.104
ME05	49 47.8	129 36.0	87 10 14	20:19	32.125
MD06	49 16.0	129 10.9	87 10 15	00:38	32.293
MP06	48 44.6	127 40.0	87 10 15	07:40	32.182
MA05	48 20.2	127 06.0	87 10 15	12:23	32.315
MA04	48 30.2	126 52.5	87 10 15	14:39	32.187
MA3B	48 36.2	126 44.2	87 10 15	16:27	32.215
MA03	48 40.2	126 38.8	87 10 15	17:40	32.146
MA2B	48 45.2	126 32.0	87 10 15	19:10	32.166
MA02	48 50.2	126 25.3	87 10 15	20:00	32.294
MA1B	48 55.2	126 18.0	87 10 15	20:56	32.012
MA01	49 00.0	126 11.7	87 10 15	21:39	32.009
MA0B	49 03.8	126 05.9	87 10 15	22:10	32.004
MA00	49 08.0	126 00.2	87 10 15	22:58	31.881
JF04	48 28.0	125 00.0	87 10 16	04:37	32.385
JF03	48 24.0	124 30.0	87 10 16	06:23	31.958
JF02	48 14.2	124 00.0	87 10 16	08:20	32.208
JF01	48 16.0	123 30.0	87 10 16	10:10	31.309

Table 3

STP data taken during Cruise I.

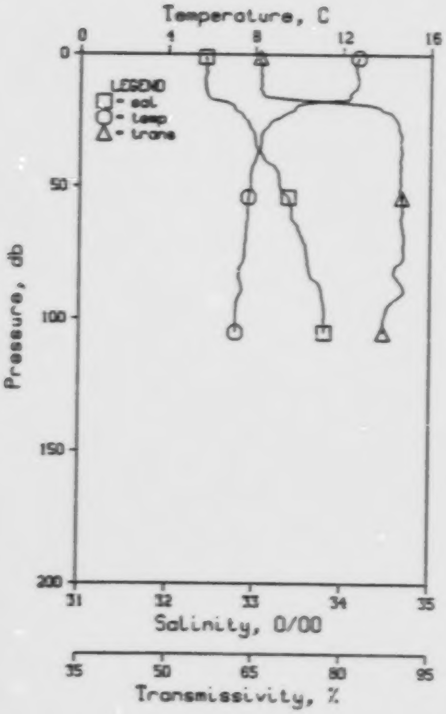


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-  1        DATE 23/ 9/87
POSITION  48-34.5N, 125-30.0W   GMT  7:41     STATION MP01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH    SIGMA    DELTA    POT.   SOUND   TRANS
                                  T        D       EN
   0   12.09   31.18       0    23.64     0.00    0.00   1493.   77.26
  10   12.11   32.35      10    24.54     0.41    0.02   1495.   77.23
  20    9.50   32.77      20    25.32     0.72    0.07   1486.   84.95
  30    8.61   33.03      30    25.66     0.97    0.13   1483.   88.37
  50    8.00   33.30      50    25.96     1.40    0.30   1482.   88.12
  75    7.38   33.60      75    26.29     1.88    0.61   1480.   87.12
 100    7.11   33.72      99    26.42     2.30    0.98   1479.   82.93
 125    7.06   33.75     124    26.45     2.70    1.44   1480.   75.84

DEEPEST MEASUREMENT:

 127    7.06   33.74     126    26.44     2.73    1.49   1480.   77.40
```

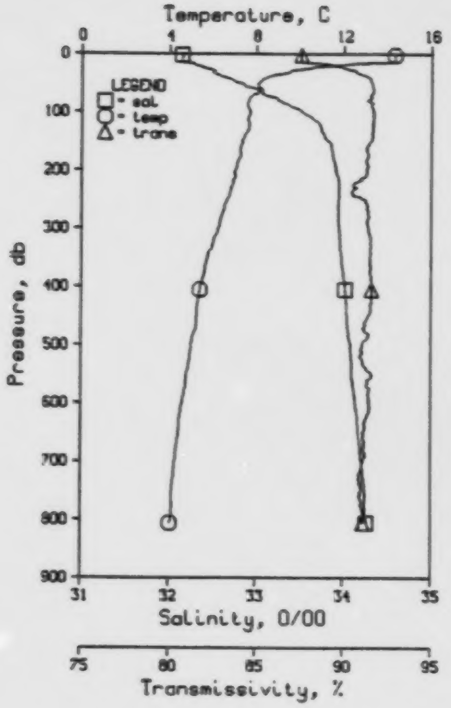


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-  2        DATE 23/ 9/87
POSITION  48-36.0N, 126- 0.0W   GMT  9:41     STATION MP02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH    SIGMA    DELTA    POT.   SOUND   TRANS
                                  T        D       EN
   0   12.68   32.43       0    24.49     0.00    0.00   1497.   65.74
  10   12.68   32.42      10    24.48     0.34    0.02   1497.   65.91
  20    9.83   32.75      20    25.25     0.67    0.07   1487.   86.13
  30    8.31   32.99      30    25.68     0.92    0.13   1482.   89.99
  50    7.79   33.28      50    25.98     1.36    0.31   1481.   89.65
  75    7.53   33.59      75    26.26     1.83    0.61   1480.   90.40
 100    7.13   33.79      99    26.47     2.25    0.98   1480.   87.02

DEEPEST MEASUREMENT:

 105    7.13   33.79     104    26.47     2.33    1.06   1480.   86.92
```

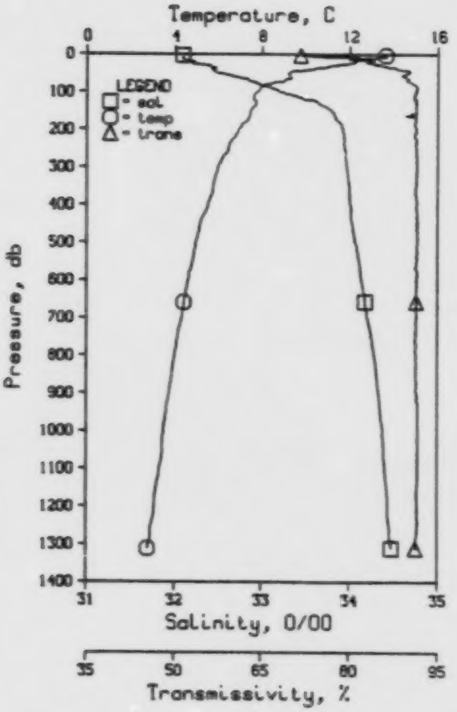


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-  3          DATE 23/ 9/87
POSITION  48-37.5N, 126-20.0W   GMT 11:12     STATION MP03
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.  SOUND  TRANS
                                T       D       EN
   0   14.29   32.13      0   23.94    0.00    0.00  1502.  87.54
  10   14.30   32.13     10   23.94    0.40    0.02  1502.  87.55
  20   11.50   32.32     20   24.63    0.77    0.08  1493.  89.50
  30    9.54   32.50     30   25.10    1.08    0.15  1486.  90.70
  50    8.08   32.81     50   25.57    1.61    0.37  1481.  91.57
  75    7.66   33.22     75   25.95    2.18    0.73  1481.  91.54
 100    7.71   33.53     99   26.19    2.67    1.17  1482.  91.66
 125    7.64   33.73    124   26.36    3.11    1.67  1482.  91.65
 150    7.33   33.83    149   26.47    3.52    2.25  1481.  91.52
 175    7.25   33.87    174   26.52    3.91    2.90  1481.  91.35
 200    7.02   33.91    199   26.58    4.29    3.62  1481.  91.28
 225    6.88   33.94    223   26.62    4.66    4.42  1481.  90.54
 250    6.63   33.93    248   26.65    5.02    5.30  1480.  91.18
 300    6.23   33.95    298   26.71    5.72    7.27  1480.  91.41
 400    5.43   34.02    397   26.87    7.03   11.91  1478.  91.60
 500    5.00   34.08    496   26.97    8.23   17.42  1478.  91.09
 600    4.60   34.13    595   27.06    9.35   23.67  1478.  91.48
 800    4.09   34.26    793   27.21   11.33   37.78  1479.  91.14

DEEPEST MEASUREMENT:

 806    4.04   34.26    799   27.22   11.39   38.24  1479.  91.12
```

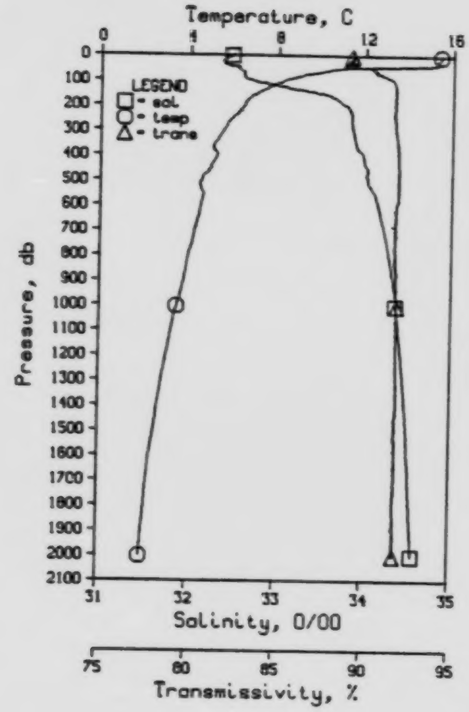


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-  4          DATE 23/ 9/87
POSITION  48-39.0N, 126-40.0W   GMT 23:47     STATION MP04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.  SOUND  TRANS
                                T       D       EN
   0   13.61   32.08      0   24.04    0.00    0.00  1499.  71.51
  10   12.76   32.08     10   24.20    0.39    0.02  1497.  81.63
  20   12.22   32.21     20   24.41    0.75    0.07  1495.  82.77
  30   11.17   32.40     30   24.74    1.09    0.16  1492.  85.10
  50    9.21   32.51     50   25.16    1.70    0.41  1485.  89.94
  75    8.52   32.92     75   25.59    2.36    0.83  1483.  90.38
 100    7.76   33.21     99   25.93    2.91    1.32  1481.  91.33
 125    7.71   33.62    124   26.25    3.40    1.88  1482.  91.17
 150    7.45   33.79    149   26.43    3.93    2.48  1482.  91.20
 175    7.30   33.85    174   26.50    4.23    3.15  1482.  91.11
 200    6.90   33.92    199   26.60    4.61    3.87  1480.  91.28
 225    6.63   33.93    223   26.65    4.97    4.66  1480.  91.27
 250    6.42   33.94    248   26.68    5.33    5.51  1479.  91.35
 300    5.96   33.96    298   26.76    6.01    7.42  1478.  91.43
 400    5.50   34.01    397   26.85    7.30   12.03  1478.  91.45
 500    4.93   34.06    496   26.96    8.51   17.54  1478.  91.56
 600    4.59   34.14    595   27.06    9.62   23.75  1478.  91.40
 800    3.96   34.28    793   27.24   11.59   37.82  1479.  91.35
1000    3.47   34.38    991   27.36   13.30   53.41  1480.  91.65
1200    3.07   34.44   1188   27.45   14.82   70.43  1482.  91.54

DEEPEST MEASUREMENT:

1311    2.76   34.47   1298   27.51   15.59   80.23  1482.  91.27
```



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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-  5          DATE 24/ 9/87
POSITION  48-20.2N, 127- 6.0W    GMT  3: 2     STATION MA05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND  TRANS
                                T       D       EN
    0  15.40  32.46       0   23.95    0.00    0.00   1506.  89.19
   10  15.39  32.42      10   23.92    0.40    0.02   1506.  89.34
   20  15.26  32.37      20   23.91    0.80    0.08   1505.  89.05
   30  15.27  32.37      30   23.91    1.20    0.18   1506.  89.24
   50  10.97  32.53      50   24.88    1.94    0.48   1492.  90.33
   75   9.23  32.59      75   25.22    2.67    0.95   1486.  90.87
  100   8.25  32.69      99   25.45    3.34    1.54   1483.  91.58
  125   7.59  33.05     124   25.82    3.94    2.23   1481.  91.67
  150   7.06  33.43     149   26.20    4.44    2.93   1480.  91.72
  175   6.61  33.67     174   26.45    4.87    3.64   1479.  91.68
  200   6.45  33.78     199   26.56    5.26    4.38   1479.  91.67
  225   6.18  33.83     224   26.62    5.63    5.18   1478.  91.65
  250   5.92  33.84     248   26.67    5.99    6.05   1477.  91.67
  300   5.51  33.85     298   26.73    6.66    7.99   1476.  91.73
  400   5.20  33.98     397   26.86    7.97   12.59   1477.  91.90
  500   4.54  34.03     496   26.98    9.16   18.02   1476.  91.94
  600   4.50  34.15     595   27.08   10.25   24.11   1478.  91.82
  800   3.95  34.28     793   27.24   12.20   38.02   1479.  91.76
 1000   3.47  34.37     991   27.36   13.91   53.67   1480.  91.89
 1200   3.01  34.43    1188   27.45   15.43   70.70   1482.  91.85
 1500   2.49  34.50    1484   27.56   17.43   98.13   1484.  91.85
 2000   1.93  34.58    1976   27.66   20.26  148.32   1490.  91.83

DEEPEST MEASUREMENT:

2003    1.93  34.58    1979   27.67   20.27  148.64  1490.  91.85
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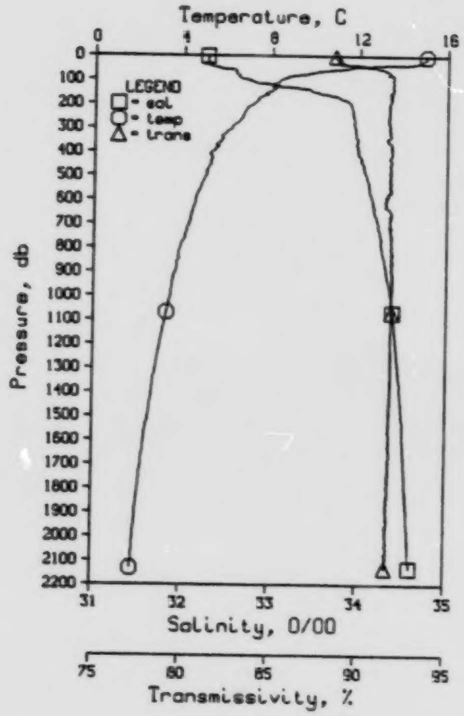

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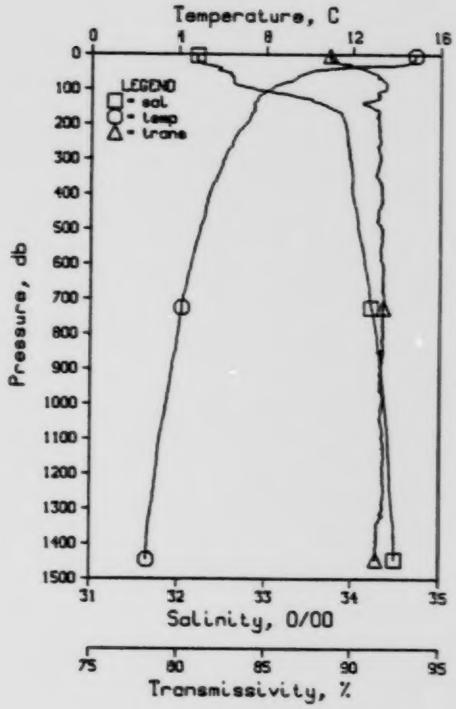
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-  5          DATE 24/ 9/87
POSITION  48-30.2N, 126-52.5W    GMT  5:22     STATION MA04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND  TRANS
                                T       D       EN
    0  15.00  32.26       0   23.88    0.00    0.00   1504.  88.58
   10  15.00  32.26      10   23.89    0.40    0.02   1504.  88.65
   20  14.80  32.26      20   23.93    0.80    0.08   1504.  88.77
   30  14.60  32.24      30   23.96    1.20    0.18   1503.  88.95
   50  11.46  32.39      50   24.68    1.93    0.48   1493.  90.85
   75   9.64  32.59      75   25.15    2.68    0.95   1487.  91.70
  100   8.34  32.73      99   25.46    3.35    1.55   1483.  91.85
  125   8.01  33.03     124   25.75    3.95    2.24   1482.  91.86
  150   7.85  33.47     149   26.12    4.47    2.96   1483.  91.85
  175   7.36  33.77     174   26.42    4.91    3.70   1482.  91.78
  200   7.13  33.89     199   26.55    5.31    4.45   1481.  91.68
  225   6.81  33.92     224   26.61    5.68    5.26   1481.  91.69
  250   6.66  33.92     248   26.64    6.04    6.14   1480.  91.66
  300   6.15  33.95     298   26.73    6.75    8.10   1479.  91.69
  400   5.27  33.98     397   26.86    8.05   12.73   1477.  91.83
  500   4.99  34.08     496   26.97    9.25   18.23   1478.  91.78
  600   4.55  34.15     595   27.07   10.35   24.39   1478.  91.59
  800   3.87  34.26     793   27.23   12.32   38.40   1478.  91.86
 1000   3.46  34.37     991   27.36   14.03   54.08   1480.  91.87
 1200   3.02  34.42    1188   27.45   15.55   71.08   1482.  91.84
 1500   2.51  34.51    1484   27.56   17.55   98.61   1484.  91.83
 2000   1.90  34.59    1976   27.67   20.37  148.54   1490.  91.69

DEEPEST MEASUREMENT:

2132    1.79  34.61    2106   27.70   21.02  162.38  1492.  91.66
```



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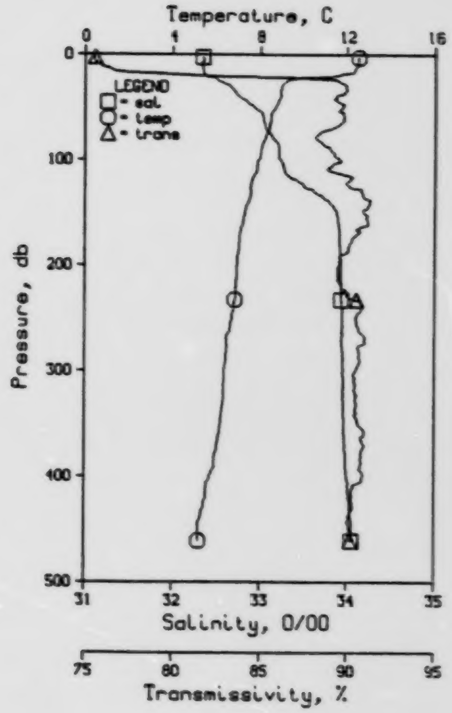
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-  7          DATE 24/ 9/87
POSITION  48-36.1N, 126-44.1W   GMT  7:12    STATION MA38
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA   POT.   SOUND   TRANS
                                T       D      EN
    0  14.83  32.20       0   23.88    0.00    0.00  1503.   88.64
   10  14.82  32.19      10   23.87    0.40    0.02  1504.   88.76
   20  14.58  32.22      20   23.95    0.81    0.08  1503.   88.67
   30  14.03  32.31      30   24.13    1.20    0.18  1501.   89.73
   50   9.99  32.53      50   25.05    1.84    0.44  1488.   91.00
   75   9.20  32.61      75   25.24    2.55    0.89  1486.   91.69
  100   8.18  32.87      99   25.60    3.20    1.47  1482.   91.83
  125   7.61  33.43     124   26.12    3.73    2.08  1481.   91.50
  150   7.45  33.71     149   26.36    4.18    2.70  1482.   91.00
  175   7.27  33.87     174   26.51    4.58    3.37  1481.   91.41
  200   7.01  33.92     199   26.59    4.96    4.10  1481.   91.46
  225   6.67  33.93     224   26.64    5.33    4.89  1480.   91.52
  250   6.45  33.94     248   26.68    5.69    5.75  1480.   91.58
  300   6.05  33.96     298   26.75    6.37    7.68  1479.   91.60
  400   5.39  34.00     397   26.86    7.66   12.27  1478.   91.65
  500   4.98  34.07     496   26.96    8.86   17.77  1478.   91.68
  600   4.56  34.14     595   27.07    9.97   23.97  1478.   91.74
  800   3.97  34.28     793   27.24   11.93   37.93  1479.   91.78
 1000   3.45  34.38     991   27.37   13.63   53.51  1480.   91.72
 1200   2.99  34.44    1188   27.46   15.12   70.17  1482.   91.81

DEEPEST MEASUREMENT:

1445    2.60  34.50    1430   27.54   16.77   92.25  1484.   91.43
```

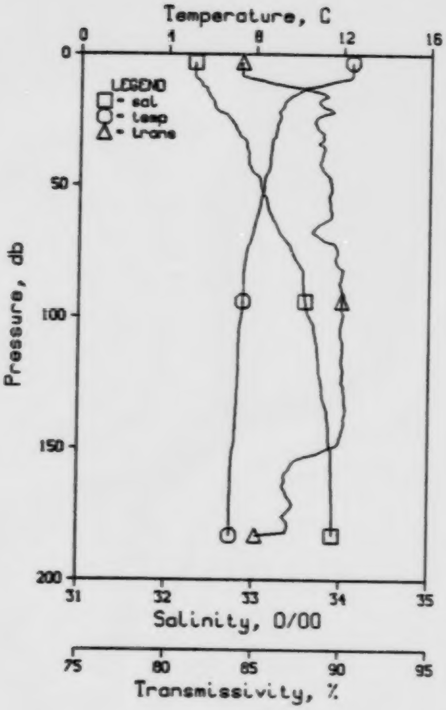


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-  8          DATE 24/ 9/87
POSITION  48-45.2N, 126-32.0W   GMT  9: 9    STATION MA28
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA   POT.   SOUND   TRANS
                                T       D      EN
    0  12.52  32.34       0   24.45    0.00    0.00  1496.   75.54
   10  12.49  32.35      10   24.46    0.35    0.02  1496.   76.00
   20  11.49  32.37      20   24.67    0.69    0.07  1493.   81.38
   30   8.97  32.65      30   25.31    0.98    0.14  1484.   89.94
   50   8.67  32.93      50   25.57    1.49    0.35  1484.   89.71
   75   8.27  33.12      75   25.78    2.08    0.72  1483.   88.39
  100   7.87  33.23      99   25.93    2.62    1.20  1482.   89.61
  125   7.55  33.50     124   26.19    3.12    1.78  1481.   90.14
  150   7.29  33.88     149   26.52    3.54    2.36  1481.   90.96
  175   7.05  33.92     174   26.58    3.91    2.99  1481.   90.33
  200   6.93  33.93     199   26.61    4.28    3.69  1481.   89.56
  225   6.86  33.94     223   26.62    4.65    4.49  1481.   89.96
  250   6.69  33.95     248   26.66    5.01    5.36  1481.   90.51
  300   6.36  33.96     298   26.71    5.71    7.33  1480.   90.52
  400   5.70  34.01     397   26.83    7.07   12.15  1479.   90.90

DEEPEST MEASUREMENT:

 461    5.17  34.06     457   26.93    7.82   15.44  1478.   90.22
```

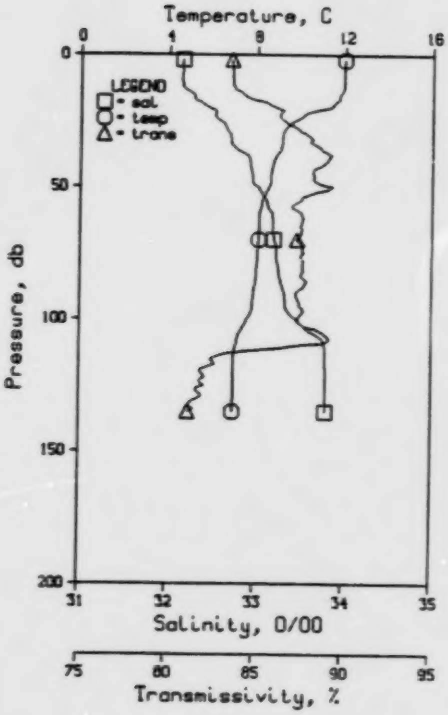


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-  9          DATE 24/ 9/87
POSITION  48-50.2N, 126-25.3W    GMT 10: 8     STATION MA02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA   POT.   SOUND   TRANS
                                T       D      EN
    0  12.38  32.30       0   24.45    0.00   0.00   1495.   84.17
   10  11.70  32.35      10   24.61    0.35   0.02   1493.   85.33
   20   9.23  32.52      20   25.17    0.65   0.06   1485.   88.81
   30   8.90  32.80      30   25.44    0.91   0.13   1484.   88.85
   50   8.39  33.06      50   25.72    1.40   0.33   1483.   89.33
   75   7.62  33.42      75   26.11    1.93   0.66   1481.   89.71
  100   7.39  33.62      99   26.30    2.38   1.07   1480.   90.04
  125   7.24  33.76     124   26.43    2.80   1.55   1480.   90.00
  150   7.04  33.88     149   26.56    3.19   2.09   1480.   89.24
  175   6.95  33.91     174   26.59    3.57   2.71   1480.   86.85

DEEPEST MEASUREMENT:

  183   6.95  33.91     182   26.59    3.69    2.93 1480.   85.15
```

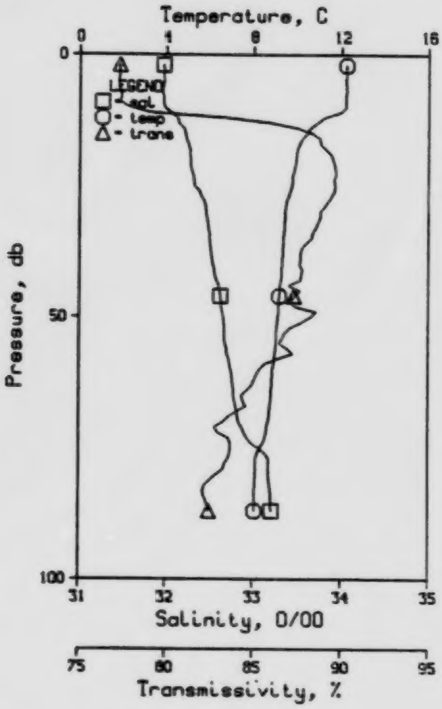


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 10          DATE 24/ 9/87
POSITION  48-55.2N, 126-18.0W    GMT 11: 3     STATION MA18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA   POT.   SOUND   TRANS
                                T       D      EN
    0  11.94  32.15       0   24.41    0.00   0.00   1494.   83.53
   10  11.94  32.14      10   24.41    0.35   0.02   1494.   83.61
   20  11.31  32.45      20   24.76    0.69   0.07   1492.   86.04
   30   9.16  32.69      30   25.31    0.98   0.14   1485.   87.79
   50   8.53  33.01      50   25.66    1.48   0.35   1483.   89.29
   75   8.04  33.22      75   25.90    2.03   0.69   1482.   87.67
  100   7.57  33.46      99   26.15    2.54   1.15   1481.   87.32
  125   6.99  33.79     124   26.49    2.95   1.62   1479.   82.08

DEEPEST MEASUREMENT:

  135   6.98  33.80     134   26.50    3.11    1.82 1480.   81.20
```

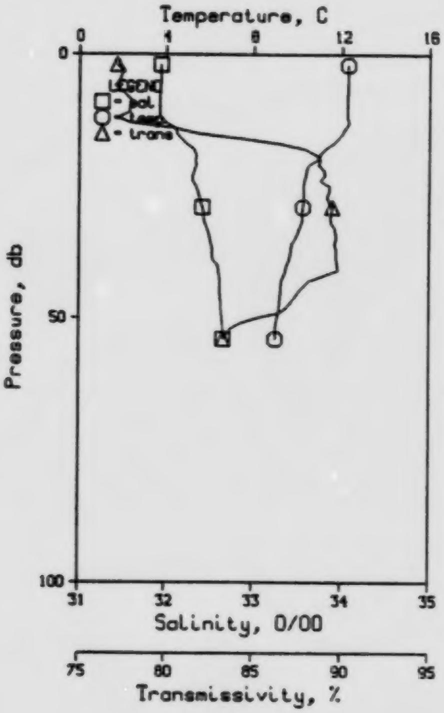


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 11          DATE 24/ 9/87
POSITION  48-60.0N, 126-11.8W   GMT 11:52     STATION MA01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND   TRANS
                                T       D       EN
   0   12.19   31.97      0   24.23    0.00    0.00   1494.   77.28
  10   12.17   31.97     10   24.23    0.37    0.02   1494.   77.84
  20    9.90   32.27     20   24.86    0.70    0.07   1487.   89.50
  30    9.44   32.46     30   25.08    1.00    0.14   1486.   88.79
  50    9.10   32.66     50   25.29    1.56    0.37   1485.   88.25
  75    8.32   33.06     75   25.73    2.20    0.78   1483.   83.72

DEEPEST MEASUREMENT:

  87    8.06   33.21     86   25.88    2.47    1.00   1482.   82.50
```

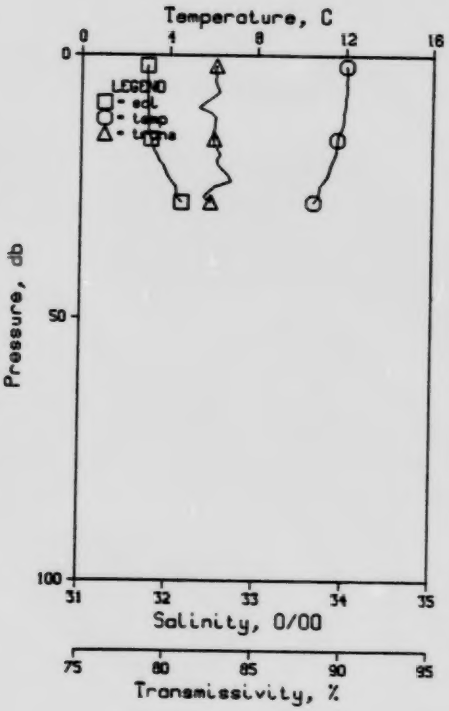


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 12          DATE 24/ 9/87
POSITION  49- 3.8N, 126- 5.9W   GMT 12:34     STATION MA08
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND   TRANS
                                T       D       EN
   0   12.25   31.93      0   24.19    0.00    0.00   1494.   77.16
  10   12.24   31.92     10   24.18    0.37    0.02   1495.   77.88
  20   10.90   32.34     20   24.74    0.73    0.07   1491.   88.74
  30   10.20   32.43     30   24.94    1.04    0.15   1488.   89.43
  50    9.08   32.64     50   25.29    1.61    0.38   1485.   85.17

DEEPEST MEASUREMENT:

  54    9.00   32.65     54   25.31    1.71    0.44   1485.   83.30
```



```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 13           DATE 24/ 9/87
POSITION  49- 8.0N, 126- 0.2W   GMT 13:11      STATION MA00
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH    SIGMA    DELTA    POT.    SOUND  TRANS
                                  T        D       EN
   0   12.02   31.74       0    24.08     0.00    0.00   1493.  82.65
  10   11.95   31.75      10    24.10     0.38    0.02   1493.  81.70
  20   11.43   31.88      20    24.30     0.76    0.08   1492.  82.73

DEEPEST MEASUREMENT:

  28   10.58   32.15      28    24.65     1.04    0.14   1489.  82.38

PRES  DEPTH     TEMP     SAL        PRES  DEPTH     TEMP     SAL

  0.           12.024  31.741        16.           11.617  31.791
  3.           12.028  31.740        17.           11.614  31.793
  4.           12.031  31.744        18.           11.569  31.823
  5.           12.015  31.746        19.           11.525  31.858
  6.           12.029  31.740        20.           11.431  31.883
  7.           12.031  31.739        21.           11.327  31.927
  8.           11.987  31.749        22.           11.252  31.957
  9.           11.989  31.750        23.           11.177  31.981
 10.           11.949  31.753        24.           11.021  32.021
 11.           11.915  31.758        25.           10.828  32.078
 12.           11.905  31.761        26.           10.804  32.082
 13.           11.881  31.763        27.           10.762  32.092
 14.           11.792  31.760        28.           10.576  32.146
 15.           11.674  31.779
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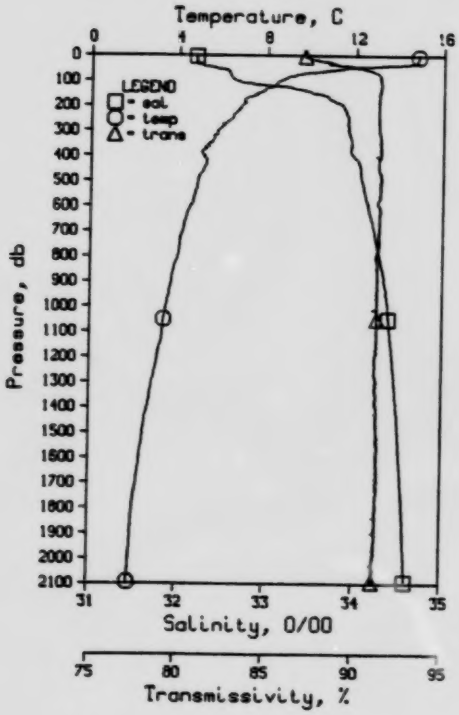
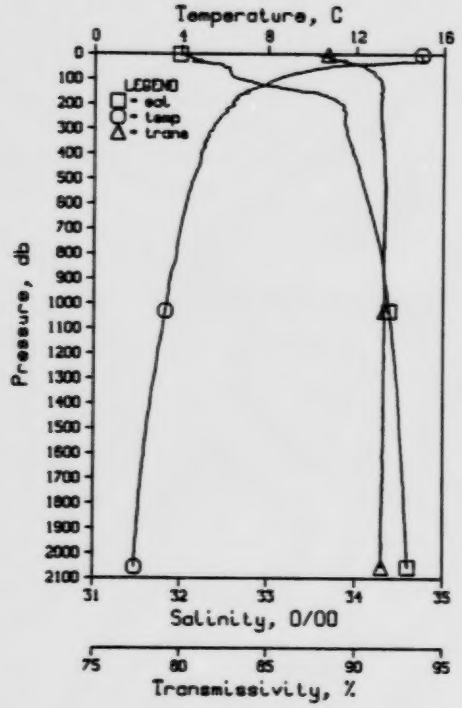


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 14           DATE 24/ 9/87
POSITION  48-41.6N, 127- 9.9W   GMT 20: 4      STATION MP05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH    SIGMA    DELTA    POT.    SOUND  TRANS
                                  T        D       EN
   0   14.81   32.19       0    23.87     0.00    0.00   1503.  87.07
  10   14.80   32.19      10    23.88     0.40    0.02   1503.  87.34
  20   14.76   32.19      20    23.89     0.81    0.08   1503.  87.82
  30   14.62   32.19      30    23.91     1.21    0.18   1503.  88.56
  50   11.48   32.41      50    24.70     1.95    0.48   1493.  90.29
  75    9.38   32.58      75    25.19     2.70    0.96   1486.  91.28
 100    8.58   32.64      99    25.36     3.38    1.56   1484.  91.39
 125    8.26   33.18     124    25.83     3.99    2.27   1484.  91.43
 150    7.52   33.51     149    26.19     4.49    2.96   1482.  91.33
 175    6.97   33.70     174    26.42     4.92    3.67   1480.  91.29
 200    6.83   33.84     199    26.55     5.32    4.43   1480.  91.30
 225    6.61   33.88     224    26.61     5.69    5.23   1480.  91.29
 250    6.41   33.91     248    26.66     6.05    6.11   1479.  91.28
 300    5.74   33.91     298    26.74     6.74    8.04   1477.  91.31
 400    5.17   33.97     397    26.87     8.02   12.62   1477.  91.40
 500    4.86   34.07     496    26.98     9.21   18.04   1477.  91.47
 600    4.55   34.14     595    27.07    10.32   24.24   1478.  91.33
 800    3.98   34.27     793    27.23    12.28   38.21   1479.  91.19
1000    3.47   34.37     991    27.36    13.98   53.76   1480.  91.30
1200    3.11   34.43    1188    27.44    15.51   70.91   1482.  91.22
1500    2.46   34.51    1484    27.56    17.52   98.46   1484.  91.32
2000    1.88   34.59    1976    27.67    20.29  147.70   1490.  91.16

DEEPEST MEASUREMENT:

2094    1.81   34.[illegible]    2069    27.69    20.76  157.49   1492.  91.15
```

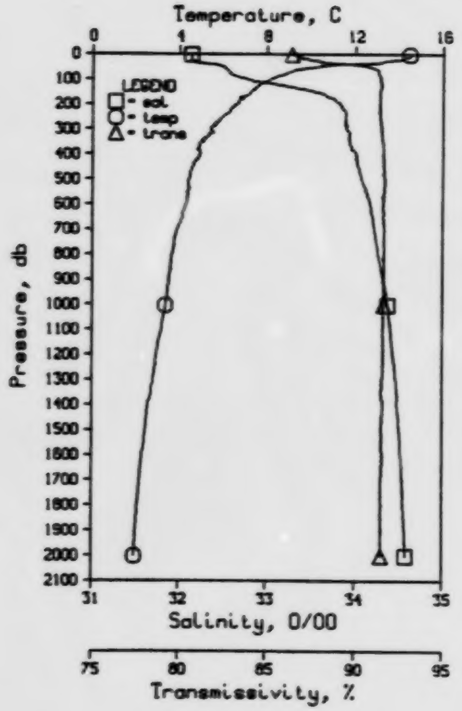


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 15          DATE 24/ 9/87
POSITION  48-44.5N, 127-40.1W    GMT 23: 4     STATION MP06
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND   TRANS
                                T       D       EN
    0  14.98  31.97      0   23.67    0.00    0.00   1504.   88.34
   10  14.95  32.07     10   23.75    0.42    0.02   1504.   88.34
   20  15.01  32.14     20   23.79    0.83    0.08   1504.   88.52
   30  14.47  32.14     30   23.90    1.24    0.19   1503.   89.23
   50  10.77  32.49     50   24.88    1.94    0.47   1491.   90.43
   75   9.37  32.56     75   25.10    2.67    0.93   1486.   90.96
  100   8.41  32.66     99   25.40    3.35    1.54   1483.   91.32
  125   7.86  32.93    124   25.70    3.96    2.24   1482.   91.45
  150   6.94  33.37    149   26.17    4.48    2.96   1479.   91.44
  175   6.60  33.71    174   26.48    4.90    3.66   1479.   91.43
  200   6.38  33.82    199   26.59    5.28    4.39   1478.   91.40
  225   6.10  33.85    224   26.66    5.64    5.17   1478.   91.37
  250   5.80  33.86    248   26.70    5.99    6.02   1477.   91.39
  300   5.44  33.88    298   26.76    6.67    7.92   1476.   91.45
  400   4.87  33.96    397   26.89    7.94   12.44   1476.   91.57
  500   4.56  34.05    496   27.00    9.11   17.79   1476.   91.65
  600   4.22  34.14    595   27.10   10.18   23.78   1476.   91.66
  800   3.78  34.29    793   27.26   12.08   37.26   1478.   91.55
 1000   3.32  34.37    991   27.37   13.74   52.51   1480.   91.63
 1200   2.92  34.43   1188   27.46   15.23   69.22   1481.   91.62
 1500   2.43  34.50   1484   27.56   17.21   96.27   1484.   91.55
 2000   1.89  34.59   1976   27.67   20.00  145.95   1490.   91.50

DEEPEST MEASUREMENT:

2055    1.87  34.59   2030   27.68   20.28  151.72   1491.   91.50
```

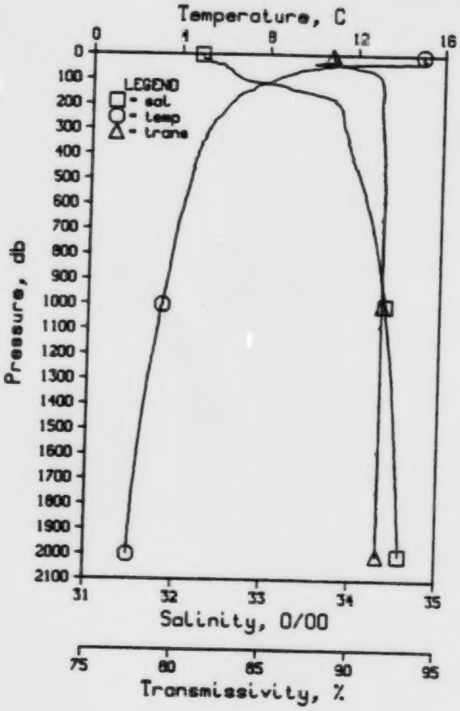


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 16          DATE 25/ 9/87
POSITION  48-46.6N, 128-10.0W    GMT  3:38     STATION MP07
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND   TRANS
                                T       D       EN
    0  14.43  32.13      0   23.90    0.00    0.00   1502.   86.38
   10  14.42  32.13     10   23.91    0.40    0.02   1502.   86.87
   20  14.21  32.13     20   23.95    0.80    0.08   1502.   87.29
   30  13.24  32.16     30   24.17    1.18    0.18   1499.   98.01
   50  10.31  32.50     50   24.98    1.86    0.45   1489.   90.69
   75   8.85  32.58     75   25.27    2.57    0.90   1484.   91.28
  100   8.15  32.76     99   25.52    3.22    1.48   1482.   91.43
  125   7.58  33.18    124   25.93    3.80    2.15   1481.   91.48
  150   7.24  33.53    149   26.25    4.29    2.83   1480.   91.40
  175   6.89  33.73    174   26.45    4.71    3.53   1480.   91.38
  200   6.62  33.82    199   26.57    5.10    4.27   1479.   91.38
  225   6.31  33.88    224   26.65    5.47    5.07   1479.   91.40
  250   5.95  33.88    248   26.70    5.82    5.92   1477.   91.38
  300   5.41  33.90    298   26.77    6.50    7.81   1476.   91.42
  400   4.91  34.01    397   26.92    7.75   12.25   1476.   91.58
  500   4.42  34.07    496   27.02    8.88   17.47   1476.   91.67
  600   4.26  34.16    595   27.12    9.93   23.35   1477.   91.59
  800   3.64  34.26    793   27.26   11.82   36.78   1477.   91.66
 1000   3.36  34.37    991   27.37   13.50   52.11   1480.   91.63
 1200   2.92  34.43   1188   27.46   14.99   68.85   1481.   91.60
 1500   2.44  34.50   1484   27.56   16.96   95.92   1484.   91.50
 2000   1.93  34.58   1976   27.66   19.77  145.85   1490.   91.49

DEEPEST MEASUREMENT:

2003    1.93  34.58   1979   27.66   19.79  146.17   1490.   91.49
```

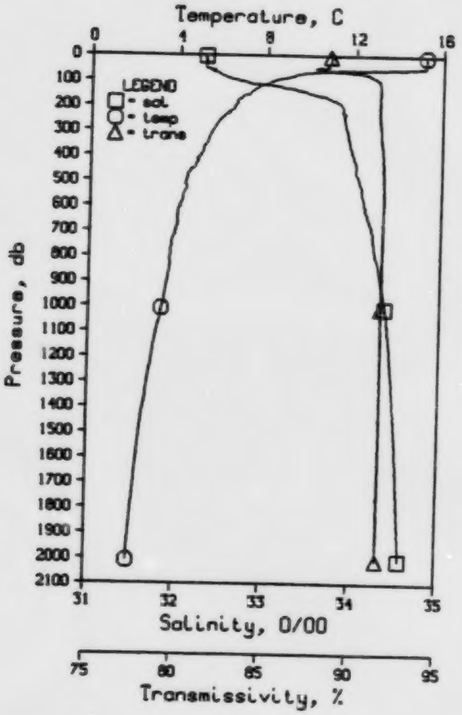


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 17             DATE 25/ 9/87
POSITION  48-49.0N, 128-40.0W       GMT  6:53     STATION MP08
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA   POT.   SOUND  TRANS
                                T       D      EN
    0  14.99  32.22      0   23.86    0.00    0.00  1504.  88.52
   10  14.98  32.24     10   23.87    0.40    0.02  1504.  88.58
   20  15.10  32.30     20   23.90    0.81    0.08  1505.  88.64
   30  15.10  32.31     30   23.91    1.21    0.18  1505.  88.68
   50  10.31  32.49     50   24.97    1.89    0.46  1489.  89.81
   75   9.02  32.58     75   25.25    2.60    0.91  1485.  91.09
  100   8.23  32.70     99   25.46    3.26    1.50  1482.  91.37
  125   7.44  33.15    124   25.92    3.85    2.17  1480.  91.42
  150   6.91  33.41    149   26.20    4.35    2.87  1479.  91.48
  175   6.49  33.69    174   26.48    4.77    3.57  1478.  91.47
  200   6.20  33.79    199   26.59    5.15    4.30  1478.  91.42
  225   5.97  33.83    224   26.65    5.52    5.08  1477.  91.42
  250   5.75  33.83    248   26.69    5.87    5.94  1477.  91.43
  300   5.29  33.86    298   26.76    6.55    7.84  1476.  91.52
  400   4.80  33.95    397   26.89    7.81   12.35  1475.  91.64
  500   4.54  34.06    496   27.00    8.98   17.68  1476.  91.69
  600   4.23  34.14    595   27.10   10.05   23.65  1476.  91.72
  800   3.74  34.28    793   27.26   11.94   37.14  1478.  91.67
 1000   3.32  34.37    991   27.37   13.61   52.43  1480.  91.66
 1200   2.93  34.43   1188   27.46   15.11   69.19  1481.  91.65
 1500   2.43  34.50   1484   27.56   17.08   96.20  1484.  91.66
 2000   1.93  34.57   1976   27.66   19.89  146.22  1490.  91.61

DEEPEST MEASUREMENT:

2002    1.93  34.57   1978   27.66   19.90  146.44  1490.  91.63
```

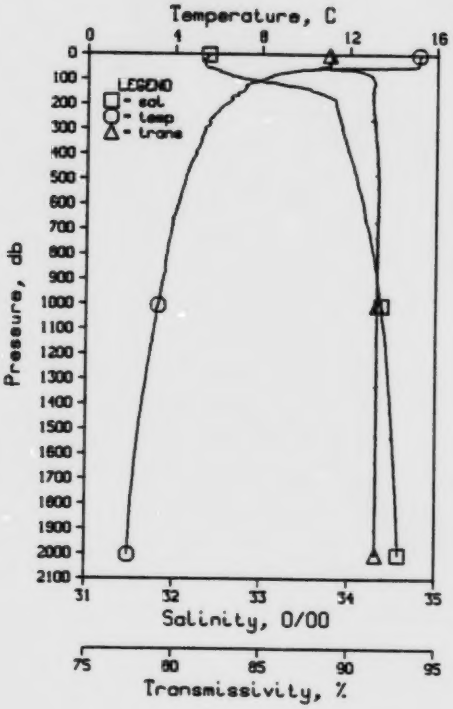


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 18             DATE 25/ 9/87
POSITION  48-51.4N, 129-10.0W       GMT 10: 4     STATION MP09
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA   POT.   SOUND  TRANS
                                T       D      EN
    0  15.20  32.29      0   23.87    0.00    0.00  1505.  88.53
   10  15.20  32.29     10   23.87    0.40    0.02  1505.  88.55
   20  15.20  32.29     20   23.87    0.81    0.08  1505.  88.57
   30  15.18  32.29     30   23.87    1.21    0.19  1505.  88.50
   50  14.89  32.29     50   23.93    2.02    0.52  1505.  87.81
   75   9.34  32.45     75   25.10    2.84    1.03  1486.  90.65
  100   8.29  32.68     99   25.43    3.53    1.64  1483.  91.30
  125   7.60  33.15    124   25.90    4.13    2.33  1481.  91.38
  150   7.20  33.46    149   26.20    4.62    3.01  1480.  91.41
  175   6.67  33.72    174   26.48    5.05    3.72  1479.  91.39
  200   6.51  33.84    199   26.59    5.43    4.45  1479.  91.39
  225   6.21  33.85    224   26.64    5.79    5.24  1478.  91.36
  250   5.93  33.87    248   26.69    6.15    6.09  1477.  91.41
  300   5.53  33.91    298   26.77    6.83    7.99  1477.  91.47
  400   5.01  33.98    397   26.89    8.10   12.52  1476.  91.62
  500   4.35  34.05    496   27.02    9.25   17.80  1475.  91.72
  600   4.03  34.11    595   27.10   10.32   23.77  1476.  91.67
  800   3.64  34.25    793   27.25   12.22   37.35  1477.  91.66
 1000   3.33  34.37    991   27.37   13.91   52.78  1480.  91.64
 1200   2.88  34.43   1188   27.46   15.39   69.35  1481.  91.64
 1500   2.39  34.50   1484   27.56   17.35   96.27  1484.  91.65
 2000   1.90  34.58   1976   27.67   20.15  146.03  1490.  91.63

DEEPEST MEASUREMENT:

2010    1.88  34.59   1986   27.67   20.20  147.07  1490.  91.63
```

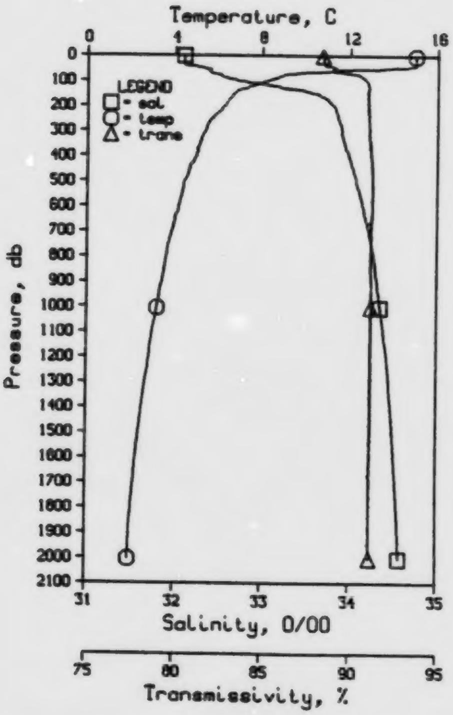


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 19          DATE 25/ 9/87
POSITION  48-53.6N, 129-40.0W    GMT 13: 5     STATION MP10
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND   TRANS
                                T       D       EN
    0  15.16  32.38      0   23.94    0.00    0.00  1505.   88.83
   10  15.17  32.36     10   23.93    0.40    0.02  1505.   88.94
   20  15.16  32.35     20   23.92    0.80    0.08  1505.   88.98
   30  15.13  32.32     30   23.91    1.20    0.18  1505.   88.86
   50  14.83  32.35     50   23.99    2.00    0.51  1504.   88.36
   75   8.85  32.55     75   25.25    2.77    1.00  1484.   90.89
  100   8.06  32.82     99   25.58    3.42    1.57  1482.   91.32
  125   7.24  33.28    124   26.05    3.97    2.20  1480.   91.40
  150   7.05  33.61    149   26.34    4.42    2.84  1480.   91.34
  175   6.51  33.79    174   26.55    4.83    3.50  1478.   91.31
  200   6.36  33.85    199   26.62    5.20    4.21  1478.   91.32
  225   5.99  33.85    224   26.67    5.55    4.98  1477.   91.35
  250   5.72  33.88    248   26.72    5.90    5.82  1477.   91.38
  300   5.34  33.91    298   26.79    6.56    7.68  1476.   91.45
  400   4.96  34.00    397   26.91    7.81   12.12  1476.   91.59
  500   4.49  34.08    496   27.03    8.95   17.33  1476.   91.68
  600   4.18  34.16    595   27.12   10.00   23.20  1476.   91.66
  800   3.65  34.28    793   27.27   11.87   36.54  1478.   91.64
 1000   3.29  34.37    991   27.38   13.53   51.72  1479.   91.63
 1200   2.90  34.43   1188   27.46   15.01   68.28  1481.   91.63
 1500   2.39  34.50   1484   27.56   16.98   95.26  1484.   91.62
 2000   1.93  34.57   1976   27.66   19.78  145.18  1490.   91.59

DEEPEST MEASUREMENT:

2004    1.92  34.58   1980   27.66   19.81  145.61  1490.   91.57
```

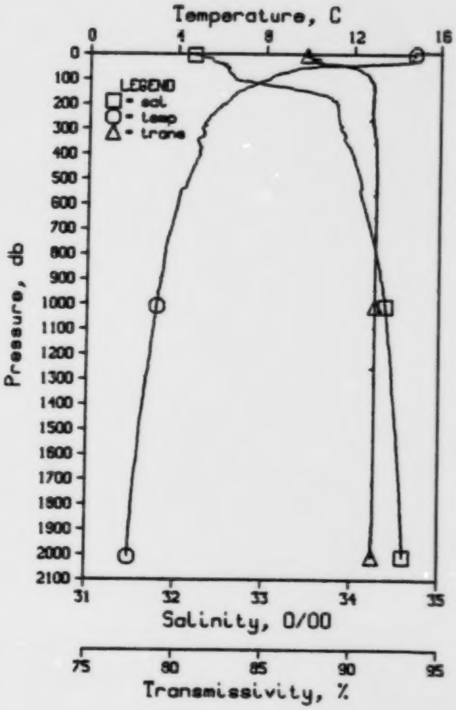


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 20          DATE 25/ 9/87
POSITION  48-56.0N, 130-10.0W    GMT 16: 3     STATION MP11
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND   TRANS
                                T       D       EN
    0  14.96  32.10      0   23.77    0.00    0.00  1504.   88.41
   10  14.97  32.10     10   23.77    0.41    0.02  1504.   88.49
   20  14.97  32.10     20   23.77    0.83    0.08  1504.   88.45
   30  14.97  32.10     30   23.77    1.24    0.19  1504.   88.49
   50  13.59  32.32     50   24.23    2.05    0.52  1500.   89.16
   75   8.98  32.49     75   25.18    2.86    1.03  1485.   90.40
  100   8.26  32.70     99   25.46    3.53    1.63  1483.   90.88
  125   7.34  33.20    124   25.98    4.10    2.28  1480.   91.04
  150   6.69  33.58    149   26.37    4.57    2.93  1478.   91.01
  175   6.45  33.74    174   26.53    4.97    3.60  1478.   90.98
  200   6.25  33.81    199   26.60    5.35    4.32  1478.   91.03
  225   5.99  33.84    224   26.66    5.71    5.10  1477.   91.04
  250   5.69  33.86    248   26.71    6.06    5.94  1476.   91.06
  300   5.38  33.90    298   26.79    6.72    7.80  1476.   91.09
  400   4.97  33.98    397   26.89    7.98   12.28  1476.   91.20
  500   4.41  34.07    496   27.02    9.13   17.53  1475.   91.30
  600   4.16  34.14    595   27.11   10.18   23.44  1476.   91.29
  800   3.59  34.27    793   27.27   12.06   36.81  1477.   91.24
 1000   3.19  34.35    991   27.37   13.72   52.00  1479.   91.24
 1200   2.83  34.43   1188   27.47   15.20   68.57  1481.   91.23
 1500   2.38  34.50   1484   27.56   17.16   95.48  1484.   91.24
 2000   1.93  34.58   1976   27.66   19.97  145.37  1490.   91.19

DEEPEST MEASUREMENT:

2005    1.93  34.58   1981   27.66   19.99  145.90  1491.   91.20
```

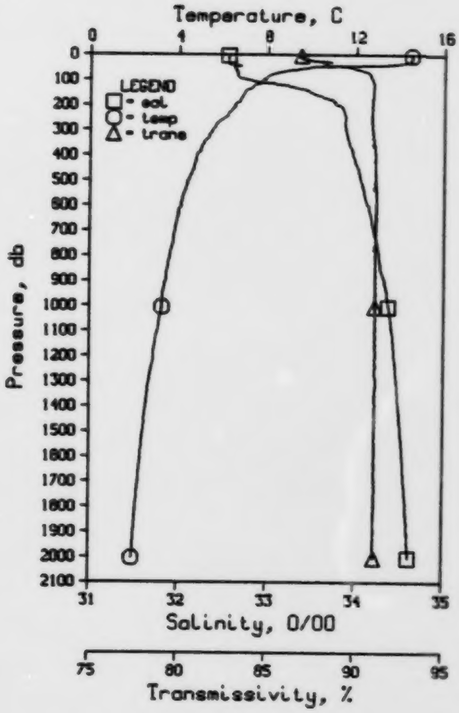


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 21          DATE 25/ 9/87
POSITION  48-58.1N, 130-40.0W    GMT 19: 8     STATION MP12
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND   TRANS
                                T       D       EN
    0  14.80  32.17      0   23.86    0.00    0.00   1503.   87.30
   10  14.80  32.25     10   23.92    0.40    0.02   1504.   87.41
   20  14.61  32.38     20   24.06    0.80    0.06   1503.   87.92
   30  14.54  32.39     30   24.08    1.18    0.18   1503.   87.52
   50  10.29  32.51     50   24.99    1.87    0.46   1489.   89.63
   75   8.78  32.57     75   25.28    2.57    0.90   1484.   90.50
  100   8.13  32.63     99   25.42    3.23    1.49   1482.   90.89
  125   7.43  33.02    124   25.83    3.83    2.17   1480.   91.11
  150   6.71  33.49    149   26.29    4.32    2.86   1478.   91.13
  175   6.38  33.73    174   26.53    4.73    3.54   1478.   91.08
  200   6.14  33.80    199   26.61    5.10    4.25   1477.   91.01
  225   5.74  33.81    224   26.67    5.46    5.03   1476.   91.06
  250   5.42  33.82    248   26.72    5.81    5.87   1475.   91.06
  300   5.09  33.85    298   26.78    6.48    7.74   1475.   91.14
  400   5.01  33.98    397   26.89    7.73   12.22   1476.   91.29
  500   4.51  34.08    496   27.02    8.89   17.50   1476.   91.31
  600   4.04  34.12    595   27.11    9.94   23.42   1476.   91.33
  800   3.47  34.27    793   27.28   11.82   36.74   1477.   91.32
 1000   3.13  34.37    991   27.39   13.44   51.56   1479.   91.29
 1200   2.86  34.44   1188   27.47   14.90   67.91   1481.   91.29
 1500   2.39  34.51   1484   27.57   16.86   94.81   1484.   91.30
 2000   1.94  34.60   1976   27.67   19.62  143.88   1490.   91.20

DEEPEST MEASUREMENT:

2009    1.94  34.60   1985   27.67   19.67  144.82   1491.   91.21
```

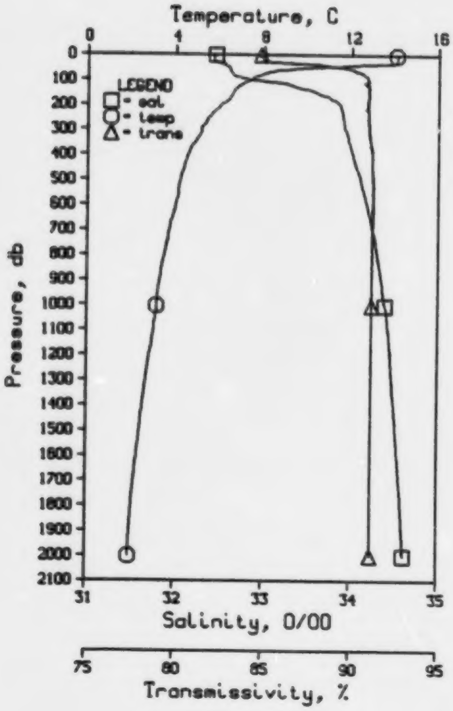


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 22          DATE 26/ 9/87
POSITION  49- 2.5N, 131-40.0W    GMT  0:19     STATION MP13
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND   TRANS
                                T       D       EN
    0  14.50  32.55      0   24.21    0.00    0.00   1503.   86.84
   10  14.50  32.55     10   24.21    0.37    0.02   1503.   86.85
   20  14.48  32.55     20   24.22    0.74    0.06   1503.   87.03
   30  14.30  32.55     30   24.26    1.11    0.17   1503.   88.55
   50   9.85  32.62     50   25.14    1.79    0.44   1488.   89.54
   75   8.33  32.65     75   25.41    2.47    0.87   1482.   90.70
  100   7.76  32.76     99   25.57    3.10    1.43   1481.   90.88
  125   7.31  33.23    124   26.00    3.66    2.08   1480.   90.97
  150   6.95  33.47    149   26.25    4.14    2.74   1479.   90.96
  175   6.76  33.67    174   26.43    4.57    3.45   1479.   90.94
  200   6.51  33.77    199   26.54    4.96    4.21   1479.   90.91
  225   6.30  33.85    224   26.63    5.33    5.00   1478.   90.89
  250   6.05  33.87    248   26.68    5.68    5.87   1478.   90.87
  300   5.45  33.88    298   26.75    6.37    7.78   1476.   90.90
  400   4.79  33.96    397   26.89    7.64   12.31   1475.   91.09
  500   4.42  34.05    496   27.01    8.80   17.60   1476.   91.09
  600   4.11  34.13    595   27.11    9.86   23.54   1476.   91.14
  800   3.59  34.26    793   27.26   11.74   36.98   1477.   91.06
 1000   3.24  34.37    991   27.38   13.40   52.08   1479.   91.11
 1200   2.87  34.44   1188   27.47   14.86   68.42   1481.   91.15
 1500   2.42  34.51   1484   27.57   16.79   94.98   1484.   91.10
 2000   1.95  34.62   1976   27.69   19.52  143.41   1491.   91.10

DEEPEST MEASUREMENT:

2005    1.94  34.62   1981   27.69   19.54  143.92   1491.   91.12
```

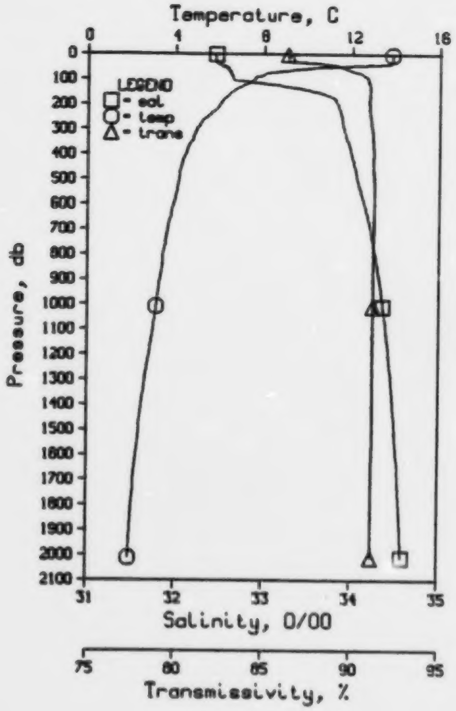


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 23          DATE 26/ 9/87
POSITION  49- 7.4N, 132-40.0W    GMT  5:18     STATION MP14
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND   TRANS
                                T       D       EN
    0  14.05  32.44      0   24.23    0.00    0.00   1501.   84.78
   10  14.05  32.42     10   24.21    0.37    0.02   1501.   84.91
   20  14.05  32.42     20   24.21    0.74    0.08   1501.   85.00
   30  14.06  32.45     30   24.23    1.12    0.17   1502.   85.40
   50  10.31  32.59     50   25.05    1.79    0.44   1489.   89.42
   75   8.01  32.63     75   25.44    2.46    0.87   1481.   90.63
  100   7.39  32.82     99   25.68    3.08    1.42   1479.   90.94
  125   6.82  33.32    124   26.15    3.59    2.01   1478.   90.95
  150   6.58  33.59    149   26.39    4.04    2.63   1478.   90.94
  175   6.43  33.75    174   26.53    4.44    3.29   1478.   90.95
  200   6.04  33.86    199   26.67    4.80    3.99   1477.   90.90
  225   5.76  33.88    223   26.72    5.15    4.73   1476.   90.94
  250   5.47  33.90    248   26.77    5.48    5.54   1476.   90.93
  300   5.17  33.92    298   26.83    6.13    7.35   1475.   90.96
  400   4.54  34.01    397   26.97    7.33   11.62   1474.   91.19
  500   4.20  34.10    496   27.08    8.42   16.62   1475.   91.24
  600   3.99  34.17    595   27.15    9.43   22.27   1476.   91.24
  800   3.49  34.30    793   27.30   11.23   35.12   1477.   91.24
 1000   3.16  34.39    991   27.40   12.82   49.67   1479.   91.20
 1200   2.83  34.45   1188   27.48   14.26   65.71   1481.   91.19
 1500   2.43  34.52   1484   27.57   16.18   92.18   1484.   91.19
 2000   1.95  34.61   1976   27.69   18.90  140.37   1491.   91.16

DEEPEST MEASUREMENT:

2002    1.95  34.61   1978   27.69   18.91  140.58   1491.   91.18
```

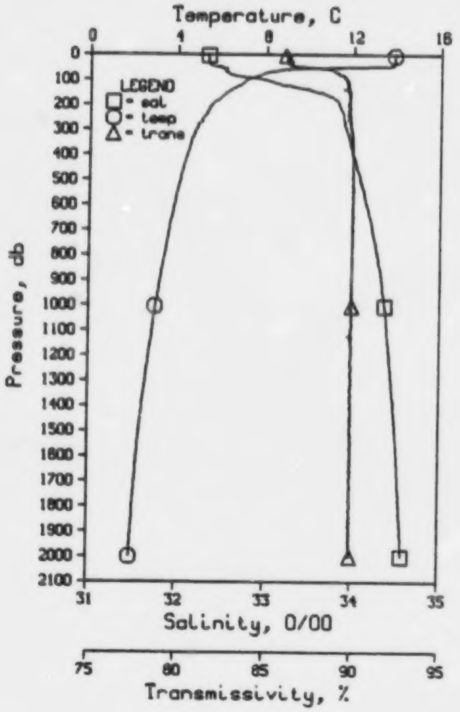


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 24          DATE 26/ 9/87
POSITION  49-12.0N, 133-40.0W    GMT 10:45     STATION MP15
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA    POT.   SOUND   TRANS
                                T       D       EN
    0  13.80  32.45      0   24.28    0.00    0.00   1500.   86.31
   10  13.80  32.44     10   24.28    0.37    0.02   1501.   86.34
   20  13.80  32.44     20   24.28    0.73    0.07   1501.   86.35
   30  13.80  32.44     30   24.28    1.10    0.17   1501.   86.41
   50  11.23  32.55     50   24.85    1.79    0.45   1493.   89.28
   75   8.17  32.61     75   25.39    2.50    0.89   1482.   90.38
  100   7.53  32.64     99   25.51    3.13    1.46   1480.   90.87
  125   7.02  33.18    124   26.01    3.71    2.12   1479.   90.97
  150   6.53  33.59    149   26.39    4.17    2.76   1478.   90.97
  175   6.24  33.79    174   26.59    4.56    3.41   1477.   90.95
  200   5.99  33.83    199   26.65    4.92    4.10   1477.   90.93
  225   5.76  33.85    224   26.70    5.27    4.86   1476.   90.96
  250   5.43  33.87    248   26.75    5.61    5.68   1475.   91.01
  300   4.94  33.90    298   26.84    6.25    7.48   1474.   91.11
  400   4.44  33.99    397   26.96    7.45   11.75   1474.   91.25
  500   4.14  34.06    496   27.04    8.55   16.79   1474.   91.26
  600   3.91  34.14    595   27.13    9.58   22.56   1475.   91.26
  800   3.42  34.27    793   27.28   11.42   35.64   1477.   91.26
 1000   3.14  34.36    991   27.38   13.05   50.58   1479.   91.23
 1200   2.83  34.42   1188   27.46   14.53   67.09   1481.   91.24
 1500   2.38  34.50   1484   27.56   16.48   93.94   1484.   91.23
 2000   1.94  34.59   1976   27.67   19.28  143.53   1490.   91.20

DEEPEST MEASUREMENT:

2012    1.94  34.59   1988   27.67   19.34  144.80   1491.   91.18
```



```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 25            DATE 26/ 9/87
POSITION  49-17.0N, 134-40.0W     GMT 16:15      STATION MP16
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL.  DEPTH   SIGMA   DELTA    POT.   SOUND  TRANS
                                T       D       EN
    0  13.84   32.34      0   24.19    0.00    0.00   1500.  86.05
   10  13.85   32.34     10   24.19    0.37    0.02   1501.  86.17
   20  13.85   32.33     20   24.18    0.75    0.08   1501.  86.10
   30  13.85   32.34     30   24.19    1.12    0.17   1501.  86.13
   50  11.67   32.47     50   24.71    1.86    0.47   1494.  87.18
   75   7.85   32.56     75   25.41    2.56    0.91   1480.  89.11
  100   7.08   32.96     99   25.83    3.16    1.45   1478.  89.53
  125   6.69   33.25    124   26.11    3.68    2.05   1478.  89.67
  150   6.20   33.58    149   26.43    4.13    2.66   1476.  89.67
  175   5.88   33.76    174   26.62    4.51    3.30   1476.  89.74
  200   5.53   33.82    199   26.70    4.86    3.97   1475.  89.70
  225   5.36   33.86    223   26.75    5.20    4.69   1475.  89.75
  250   5.16   33.88    248   26.79    5.52    5.49   1474.  89.73
  300   4.79   33.91    298   26.86    6.15    7.26   1474.  89.85
  400   4.43   33.99    397   26.96    7.34   11.46   1474.  89.97
  500   4.13   34.08    496   27.06    8.43   16.48   1474.  89.98
  600   3.86   34.15    595   27.15    9.44   22.15   1475.  89.96
  800   3.45   34.28    793   27.29   11.26   35.10   1477.  89.96
 1000   3.05   34.37    991   27.40   12.87   49.78   1478.  89.83
 1200   2.75   34.42   1188   27.47   14.32   66.00   1480.  89.93
 1500   2.34   34.50   1484   27.57   16.26   92.74   1484.  89.91
 2000   1.94   34.58   1976   27.67   19.07  142.52   1490.  89.94

DEEPEST MEASUREMENT:

2001    1.93   34.58   1977   27.67   19.07  142.63   1490.  89.95
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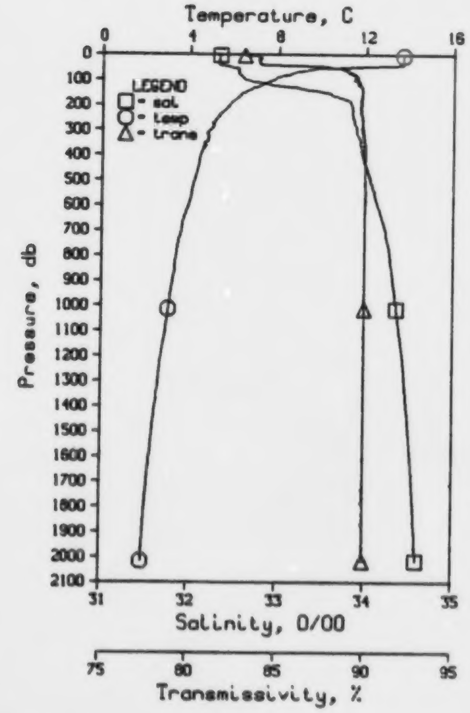
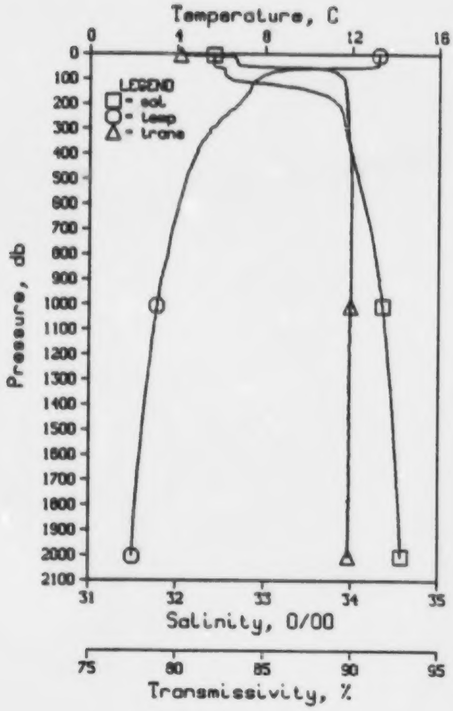


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 26            DATE 27/ 9/87
POSITION  49-20.9N, 135-40.2W     GMT  0:20      STATION MP17
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL.  DEPTH   SIGMA   DELTA    POT.   SOUND  TRANS
                                T       D       EN
    0  13.66   32.33      0   24.22    0.00    0.00   1500.  83.01
   10  13.66   32.33     10   24.22    0.37    0.02   1500.  83.85
   20  13.66   32.32     20   24.21    0.74    0.08   1500.  83.94
   30  13.66   32.32     30   24.21    1.12    0.17   1500.  83.90
   50  11.35   32.43     50   24.74    1.84    0.46   1493.  87.82
   75   8.62   32.54     75   25.28    2.55    0.92   1483.  89.14
  100   7.77   32.61     99   25.45    3.21    1.50   1481.  89.34
  125   7.11   32.99    124   25.84    3.80    2.18   1479.  89.70
  150   6.46   33.51    149   26.34    4.28    2.85   1477.  89.75
  175   6.07   33.73    174   26.56    4.69    3.51   1477.  89.71
  200   5.75   33.83    199   26.68    5.04    4.20   1476.  89.70
  225   5.48   33.84    224   26.72    5.39    4.94   1475.  89.66
  250   5.23   33.85    248   26.76    5.72    5.76   1475.  89.77
  300   4.92   33.89    298   26.83    6.37    7.56   1474.  89.81
  400   4.45   33.96    397   26.93    7.58   11.88   1474.  89.95
  500   4.19   34.05    496   27.03    8.71   17.04   1475.  89.95
  600   3.95   34.13    595   27.12    9.75   22.86   1475.  89.95
  800   3.39   34.28    793   27.30   11.57   35.79   1476.  89.95
 1000   3.08   34.35    991   27.38   13.19   50.64   1478.  89.95
 1200   2.76   34.43   1188   27.47   14.65   67.01   1481.  89.95
 1500   2.35   34.51   1484   27.57   16.59   93.68   1484.  89.95
 2000   1.92   34.60   1976   27.68   19.36  142.83   1490.  89.96

DEEPEST MEASUREMENT:

2017    1.91   34.60   1993   27.68   19.45  144.60   1491.  89.94
```

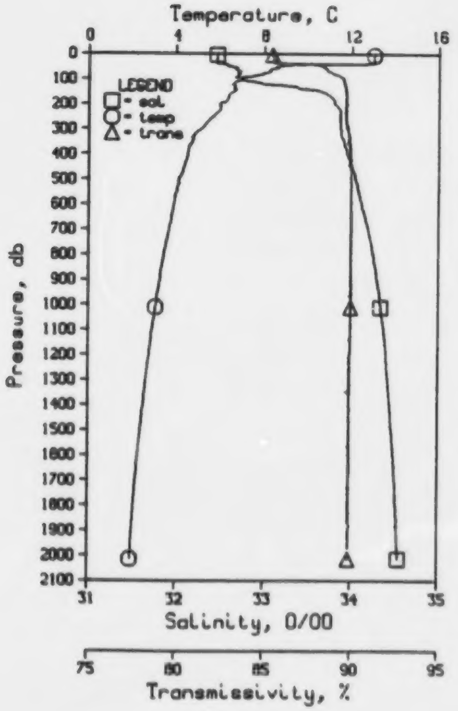


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 27          DATE 27/ 9/87
POSITION  49-26.0N, 136-40.0W    GMT  5:48     STATION MP18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA   POT.    SOUND   TRANS
                                T       D      EN
    0  13.20  32.41      0   24.37    0.00    0.00   1498.   80.14
   10  13.20  32.41     10   24.37    0.36    0.02   1498.   83.13
   20  13.20  32.41     20   24.37    0.71    0.07   1499.   83.25
   30  13.20  32.40     30   24.37    1.07    0.16   1499.   83.31
   50  12.90  32.41     50   24.43    1.78    0.45   1498.   84.30
   75   8.22  32.53     75   25.33    2.51    0.91   1482.   89.09
  100   7.65  32.59     99   25.46    3.16    1.49   1480.   89.50
  125   7.35  33.16    124   25.95    3.75    2.16   1480.   89.59
  150   7.26  33.55    149   26.26    4.23    2.83   1481.   89.59
  175   6.99  33.74    174   26.45    4.65    3.53   1480.   89.59
  200   6.78  33.83    199   26.55    5.04    4.28   1480.   89.71
  225   6.40  33.87    224   26.63    5.41    5.08   1479.   89.74
  250   6.11  33.89    248   26.68    5.77    5.94   1478.   89.73
  300   5.48  33.91    298   26.78    6.45    7.84   1476.   89.74
  400   4.87  33.99    397   26.91    7.69   12.28   1476.   89.89
  500   4.40  34.07    496   27.03    8.83   17.49   1475.   89.96
  600   4.09  34.14    595   27.12    9.88   23.36   1476.   89.96
  800   3.57  34.26    793   27.27   11.75   36.64   1477.   89.95
 1000   3.13  34.35    991   27.38   13.38   51.62   1479.   89.89
 1200   2.82  34.41   1188   27.45   14.86   [illegible].15   1481.   89.92
 1500   2.41  34.49   1484   27.55   16.85   95.42   1484.   89.87
 2000   1.98  34.57   1976   27.65   19.71  146.33   1491.   89.81

DEEPEST MEASUREMENT:

2005    1.98  34.58   1981   27.66   19.74  146.88   1491.   89.82
```



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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 28          DATE 27/ 9/87
POSITION  49-30.1N, 137-40.0W    GMT 11:12     STATION MP19
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA   POT.    SOUND   TRANS
                                T       D      EN
    0  13.01  32.46      0   24.45    0.00    0.00   1498.   85.41
   10  13.00  32.46     10   24.45    0.35    0.02   1498.   85.51
   20  13.01  32.45     20   24.44    0.70    0.07   1498.   85.48
   30  13.00  32.45     30   24.44    1.05    0.16   1498.   85.45
   50   8.51  32.57     50   25.32    1.68    0.41   1483.   88.31
   75   8.06  32.70     75   25.48    2.32    0.82   1481.   88.82
  100   7.02  32.71     99   25.64    2.93    1.37   1478.   89.48
  125   6.58  33.18    124   26.07    3.48    2.00   1477.   89.55
  150   6.60  33.64    149   26.43    3.93    2.62   1478.   89.66
  175   6.33  33.77    174   26.56    4.32    3.26   1478.   89.67
  200   5.96  33.80    199   26.63    4.69    3.97   1477.   89.69
  225   5.95  33.86    223   26.68    5.04    4.74   1477.   89.64
  250   5.67  33.86    248   26.72    5.39    5.57   1476.   89.65
  300   5.11  33.87    298   26.79    6.05    7.44   1475.   89.78
  400   4.50  33.94    397   26.92    7.29   11.83   1474.   89.90
  500   4.12  34.04    496   27.04    8.42   17.01   1474.   89.95
  600   3.89  34.12    595   27.12    9.46   22.85   1475.   89.96
  800   3.43  34.25    793   27.27   11.33   36.16   1477.   89.96
 1000   3.08  34.33    991   27.37   12.98   51.26   1478.   89.95
 1200   2.78  34.40   1188   27.45   14.47   67.94   1481.   89.92
 1500   2.39  34.47   1484   27.54   16.49   95.66   1484.   89.90
 2000   1.96  34.55   1976   27.63   19.41  147.60   1491.   89.86

DEEPEST MEASUREMENT:

2014    1.94  34.55   1990   27.64   19.49  149.16   1491.   89.85
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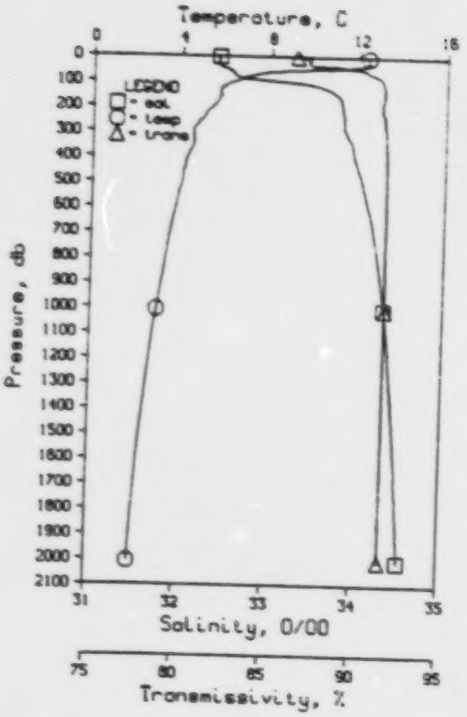

```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 29              DATE 27/ 9/87
POSITION  49-34.0N, 138-40.0W    GMT 16: 5    STATION MP20
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA   DELTA    POT.   SOUND  TRANS
                                  T       D      EN
    0  12.37   32.41       0   24.53    0.00    0.00   1496.  86.41
   10  12.38   32.40      10   24.53    0.34    0.02   1496.  87.09
   20  12.38   32.40      20   24.53    0.68    0.07   1496.  87.16
   30  12.37   32.40      30   24.53    1.03    0.16   1496.  87.14
   50   9.74   32.51      50   25.07    1.68    0.42   1487.  90.11
   75   7.10   32.59      75   25.53    2.33    0.84   1479.  90.90
  100   6.29   33.15      99   26.08    2.91    1.34   1475.  91.31
  125   5.74   33.59     124   26.50    3.33    1.83   1474.  91.45
  150   5.70   33.74     149   26.61    3.71 [illegible]  1473.  91.44
  175   5.61   33.79     174   26.67    4.06 [illegible]  1473.  91.35
  200   5.36   33.80     198   26.71    4.41    3.60   1474.  91.36
  225   5.06   33.81     223   26.75    4.74    4.33   1473.  91.39
  250   4.91   33.83     248   26.78    5.07    5.13   1473.  91.43
  300   4.53   33.85     298   26.84    5.71    6.91   1472.  91.59
  400 [illegible] 33.92   397   26.95    6.91   11.18   1473.  91.55
  500   4.06   34.03     496   27.05    8.01   16.24   1474.  91.66
  600   3.79   34.12     595   27.13    9.04   21.98   1475.  91.67
  800   3.37   34.24     793   27.27   10.89   35.15   1476.  91.66
 1000   3.01   34.32     990   27.36   12.54   50.31   1478.  91.68
 1200   2.71   34.38    1188   27.44   14.04   67.00   1480.  91.65
 1500   2.34   34.47    1484   27.54   16.06   94.84   1484.  91.67
 2000   1.95   34.55    1976   27.64   19.00  147.00   1490.  91.64

DEEPEST MEASUREMENT:

2006    1.95   34.55    1982   27.64   19.03  147.67   1491.  91.64
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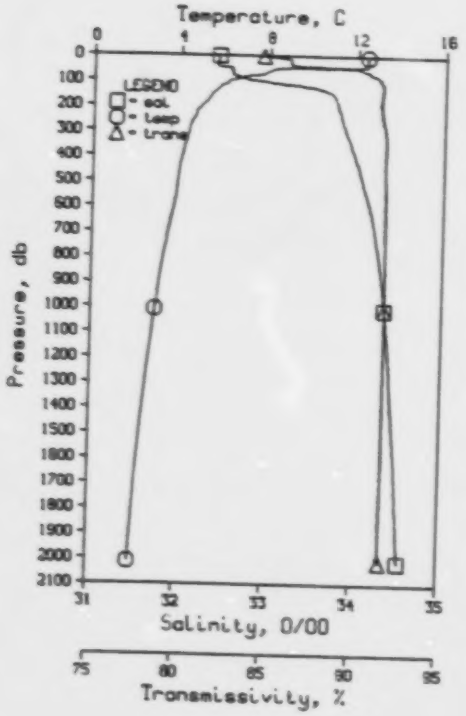
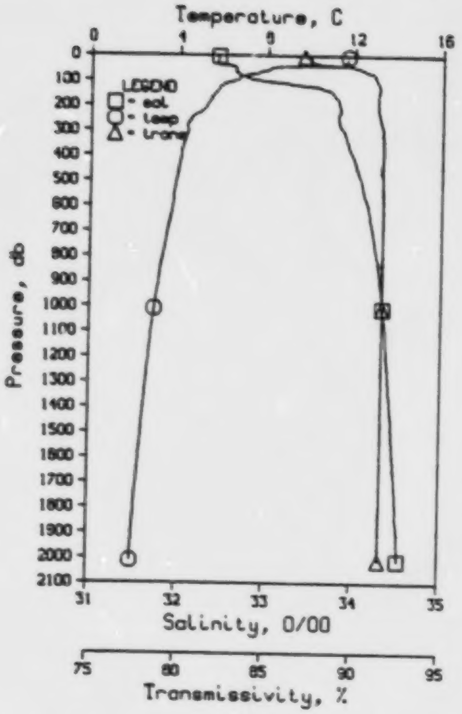


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 30              DATE 27/ 9/87
POSITION  49-38.0N, 139-40.0W    GMT 20:54    STATION MP21
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA   DELTA    POT.   SOUND  TRANS
                                  T       D      EN
    0  12.40   32.43       0   24.54    0.00    0.00   1496.  84.61
   10  12.40   32.42      10   24.54    0.34    0.02   1496.  85.71
   20  12.40   32.41      20   24.53    0.68    0.07   1496.  86.11
   30  12.40   32.41      30   24.53    1.02    0.16   1496.  86.09
   50   8.44   32.57      50   25.33    1.68    0.42   1482.  89.97
   75   7.59   32.57      75   25.45    2.33    0.83   1479.  90.76
  100   6.14   32.87      99   25.88    2.92    1.36   1474.  91.30
  125   5.76   33.47     124   26.40    3.39    1.90   1474.  91.43
  150   5.42   33.71     149   26.63    3.78    2.44   1473.  91.37
  175   5.24   33.75     174   26.68    4.13    3.02   1473.  91.38
  200   4.93   33.78     199   26.74    4.47    3.67   1472.  91.32
  225   4.71   33.81     223   26.78    4.80    4.38   1472.  91.43
  250   4.62   33.82     248   26.80    5.12    5.16   1472.  91.45
  300   4.39   33.87     298   26.87    5.74    6.90   1472.  91.60
  400   4.08   33.98     397   26.99    6.90   11.04   1472.  91.64
  500   3.88   34.07     496   27.08    7.97   15.94   1473.  91.67
  600   3.73   34.16     595   27.17    8.97   21.52   1474.  91.73
  800   3.30   34.27     793   27.30   10.76   34.29   1476.  91.72
 1000   2.96   34.34     990   27.39   12.37   48.98   1478.  91.75
 1200   2.68   34.40    1188   27.46   13.84   65.42   1480.  91.74
 1500   2.35   34.46    1484   27.54   15.84   93.00   1484.  91.73
 2000   1.93   34.55    1976   27.64   18.76  144.89   1490.  91.67

DEEPEST MEASUREMENT:

2012    1.92   34.56    1988   27.64   18.83  146.22   1491.  91.71
```



```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 31              DATE 28/ 9/87
POSITION  49-41.4N, 140-40.4W   GMT  1:38    STATION MP22
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA   POT.   SOUND   TRANS
                                T       D      EN
    0  11.63  32.44       0   24.69    0.00    0.00  1493.   87.06
   10  11.63  32.43      10   24.69    0.33    0.02  1493.   87.42
   20  11.58  32.43      20   24.69    0.65    0.07  1493.   87.39
   30  11.56  32.42      30   24.69    0.98    0.15  1493.   87.68
   50   9.12  32.62      50   25.42    1.57    0.39  1481.   90.07
   75   7.17  32.85      75   25.58    2.20    0.79  1478.   91.02
  100   6.43  32.93      99   25.88    2.78    1.30  1476.   91.19
  125   5.80  33.56     124   26.46    3.21    1.83  1474.   91.37
  150   5.60  33.73     149   26.62    3.62    2.36  1474.   91.32
  175   5.43  33.80     174   26.70    3.97    2.94  1474.   91.31
  200   5.23  33.81     199   26.73    4.31    3.59  1474.   91.30
  225   4.96  33.82     223   26.77    4.64    4.31  1473.   91.32
  250   4.52  33.80     248   26.80    4.96    5.09  1472.   91.41
  300   4.38  33.86     298   26.86    5.59    6.84  1472.   91.57
  400   4.10  33.98     397   26.99    6.76   10.99  1472.   91.63
  500   3.86  34.07     496   27.09    7.83   15.89  1473.   91.62
  600   3.71  34.16     595   27.17    8.82   21.45  1474.   91.66
  800   3.28  34.26     793   27.29   10.62   34.29  1476.   91.66
 1000   2.94  34.34     990   27.38   12.23   49.02  1478.   91.65
 1200   2.69  34.38    1188   27.44   13.71   65.58  1480.   91.63
 1500   2.39  34.45    1484   27.53   15.74   93.51  1484.   91.66
 2000   1.98  34.54    1976   27.63   18.72  146.42  1491.   91.61

DEEPEST MEASUREMENT:

2011    1.98  34.54    1987   27.63   18.78  147.66  1491.   91.62
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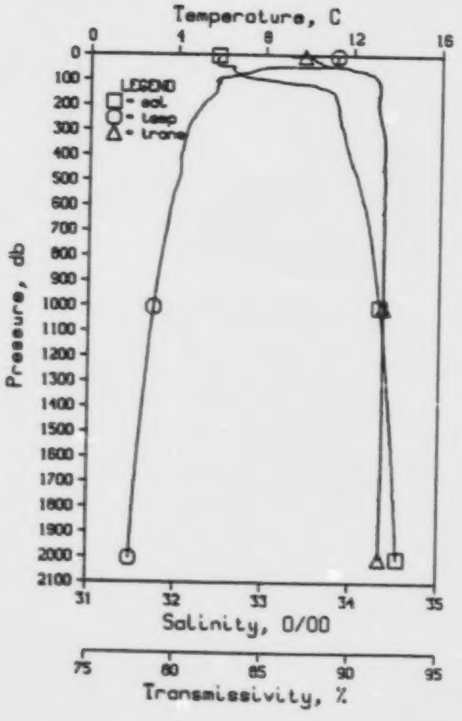

```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 32              DATE 28/ 9/87
POSITION  49-46.0N, 141-40.0W   GMT  5: 7    STATION MP23
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   DELTA   POT.   SOUND   TRANS
                                T       D      EN
    0  11.23  32.46       0   24.78    0.00    0.00  1492.   87.19
   10  11.23  32.44      10   24.77    0.32    0.02  1492.   87.58
   20  11.21  32.44      20   24.77    0.64    0.06  1492.   87.78
   30  11.15  32.44      30   24.78    0.96    0.15  1492.   88.10
   50   8.04  32.64      50   25.44    1.57    0.40  1481.   89.69
   75   6.90  32.69      75   25.64    2.19    0.79  1477.   90.85
  100   5.91  33.01      99   26.02    2.75    1.28  1474.   91.40
  125   5.78  33.57     124   26.48    3.19    1.79  1474.   91.49
  150   5.72  33.77     149   26.64    3.56    2.31  1475.   91.47
  175   5.45  33.80     174   26.69    3.91    2.89  1474.   91.39
  200   5.16  33.82     199   26.75    4.25    3.53  1473.   91.39
  225   4.92  33.83     223   26.78    4.58    4.24  1473.   91.46
  250   4.73  33.84     248   26.81    4.90    5.02  1472.   91.52
  300   4.44  33.86     298   26.87    5.52    6.76  1472.   91.72
  400   4.15  33.96     397   26.97    6.70   10.95  1473.   91.81
  500   4.06  34.05     496   27.05    7.80   15.99  1474.   91.84
  600   3.72  34.14     595   27.16    8.81   21.67  1474.   91.82
  800   3.33  34.25     793   27.28   10.64   34.65  1476.   91.84
 1000   2.98  34.32     990   27.37   12.28   49.70  1478.   91.85
 1200   2.73  34.38    1188   27.44   13.78   66.47  1480.   91.83
 1500   2.38  34.46    1484   27.53   15.82   94.50  1484.   91.82
 2000   1.97  34.54    1976   27.63   18.78  147.14  1491.   91.71

DEEPEST MEASUREMENT:

2005    1.96  34.55    1981   27.63   18.81  147.70  1491.   91.73
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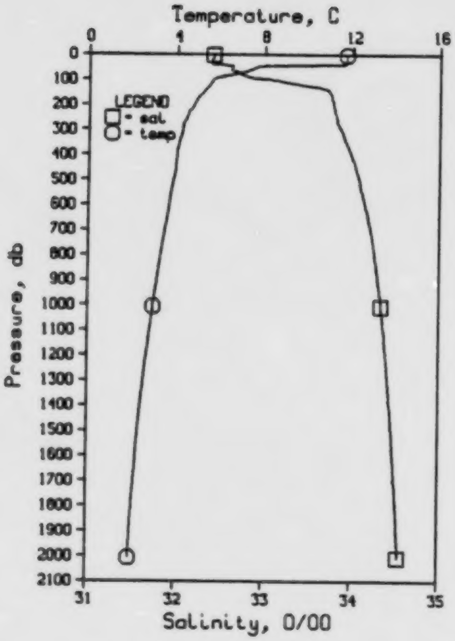

```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 33          DATE 28/ 9/87
POSITION  49-50.2N, 142-40.0W    GMT 10:37     STATION MP24
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL    DEPTH    SIGMA    SVA    DELTA     POT.   SOUND
                                   T               D        EN
    0   11.70   32.40       0    24.66   329.5    0.00     0.00   1493.
   10   11.70   32.40      10    24.65   330.0    0.33     0.02   1493.
   20   11.70   32.39      20    24.64   331.0    0.66     0.07   1493.
   30   11.67   32.39      30    24.65   331.1    0.99     0.15   1494.
   50    7.60   32.62      50    25.49   251.0    1.59     0.39   1479.
   75    6.70   32.70      75    25.67   233.8    2.21     0.78   1476.
  100    5.60   33.05      99    26.09   194.4    2.75     1.27   1472.
  125    5.42   33.48     124    26.45   160.6    3.20     1.78   1473.
  150    5.18   33.73     149    26.67   139.3    3.56     2.29   1472.
  175    4.91   33.76     174    26.72   134.6    3.90     2.85   1472.
  200    4.76   33.78     199    26.76   131.9    4.23     3.49   1472.
  225    4.52   33.79     223    26.79   128.3    4.56     4.19   1471.
  250    4.41   33.81     248    26.82   125.8    4.88     4.96   1471.
  300    4.23   33.87     298    26.88   120.4    5.49     6.69   1471.
  400    3.98   33.98     397    27.00   109.8    6.64    10.78   1472.
  500    3.84   34.08     496    27.09   102.1    7.70    15.64   1473.
  600    3.65   34.15     595    27.17    95.7    8.70    21.19   1474.
  800    3.28   34.26     793    27.29    84.8   10.49    33.98   1476.
 1000    2.95   34.34     990    27.38    76.8   12.11    48.75   1478.
 1200    2.67   34.39    1188    27.45    70.9   13.58    65.28   1480.
 1500    2.31   34.47    1484    27.54    62.6   15.58    92.64   1484.
 2000    1.93   34.55    1976    27.64    54.1   18.48   144.29   1490.

DEEPEST MEASUREMENT:

2006     1.93   34.55    1982    27.64    54.2  18.51   144.95   1490.
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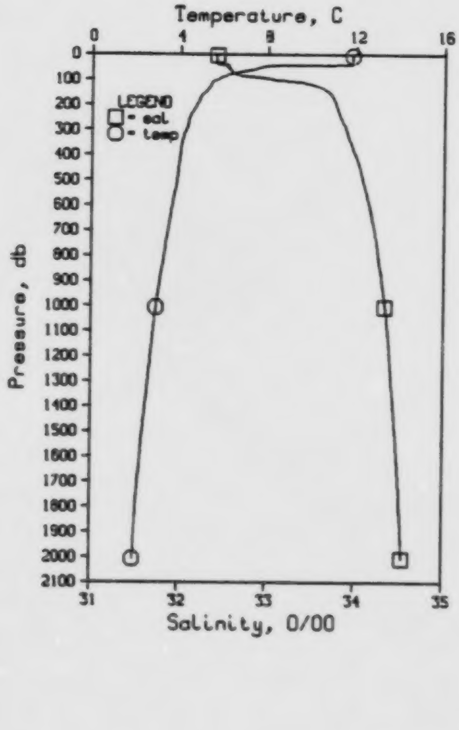

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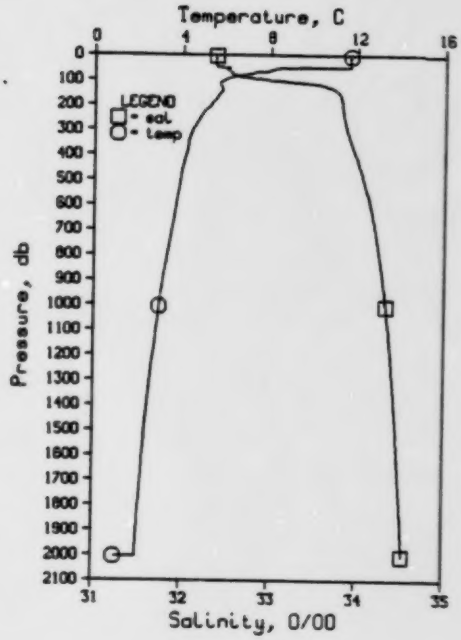
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 34          DATE 28/ 9/87
POSITION  50- 0.0N, 143-36.3W    GMT 15: 5     STATION MP25
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL    DEPTH    SIGMA    SVA    DELTA     POT.   SOUND
                                   T               D        EN
    0   11.79   32.41       0    24.64   330.9    0.00     0.00   1493.
   10   11.78   32.40      10    24.64   331.5    0.33     0.02   1494.
   20   11.79   32.40      20    24.63   332.0    0.66     0.07   1494.
   30   11.81   32.41      30    24.64   331.8    0.99     0.15   1494.
   50    7.69   32.52      50    25.40   259.8    1.60     0.40   1479.
   75    6.35   32.62      75    25.66   235.2    2.23     0.79   1475.
  100    5.65   33.05      99    26.08   195.4    2.77     1.28   1473.
  125    5.35   33.52     124    26.49   156.8    3.20     1.76   1473.
  150    5.11   33.68     149    26.64   142.2    3.57     2.28   1472.
  175    4.85   33.74     174    26.71   135.7    3.91     2.85   1472.
  200    4.73   33.76     199    26.75   132.4    4.25     3.49   1472.
  225    4.56   33.79     223    26.79   129.0    4.58     4.20   1471.
  250    4.40   33.81     248    26.82   125.6    4.89     4.97   1471.
  300    4.25   33.88     298    26.89   119.7    5.50     6.68   1471.
  400    3.98   33.99     397    27.01   109.5    6.65    10.75   1472.
  500    3.85   34.07     496    27.09   102.6    7.70    15.59   1473.
  600    3.64   34.15     595    27.17    95.3    8.69    21.13   1474.
  800    3.28   34.26     793    27.29    84.9   10.49    33.90   1476.
 1000    2.93   34.34     990    27.39    76.5   12.10    48.65   1478.
 1200    2.69   34.39    1188    27.45    71.0   13.57    65.12   1480.
 1500    2.35   34.47    1484    27.54    63.2   15.58    92.80   1484.
 2000    1.95   34.55    1976    27.63    54.8   18.51   144.78   1490.

DEEPEST MEASUREMENT:

2008     1.94   34.55    1984    27.64    54.5  18.55   145.67   1491.
```

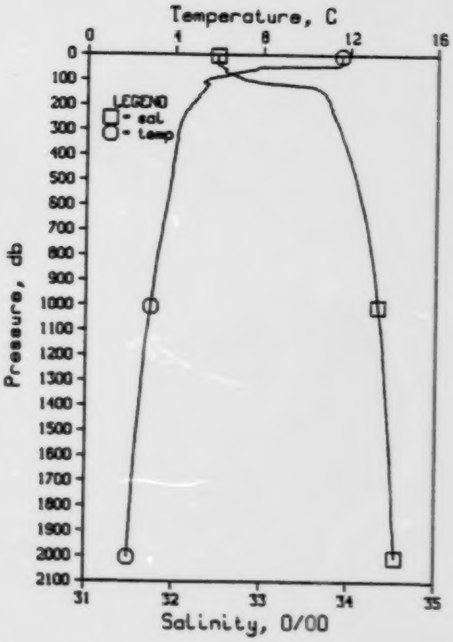


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 35          DATE 28/ 9/87
POSITION  50- 0.0N, 144-18.2W    GMT 18:49     STATION MP35
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0  11.65  32.37       0   24.63  331.5    0.00    0.00  1493.
   10  11.65  32.36      10   24.63  332.1    0.33    0.02  1493.
   20  11.65  32.36      20   24.63  332.3    0.66    0.07  1493.
   30  11.65  32.36      30   24.63  332.6    1.00    0.15  1493.
   50   9.73  32.43      50   25.01  296.3    1.66    0.42  1487.
   75   7.03  32.55      75   25.51  249.4    2.32    0.84  1477.
  100   5.83  32.97      99   25.99  203.3    2.89    1.35  1473.
  125   5.68  33.64     124   26.54  152.0    3.32    1.84  1474.
  150   5.68  33.78     149   26.65  141.6    3.69    2.35  1475.
  175   5.48  33.81     174   26.70  137.2    4.04    2.93  1474.
  200   5.23  33.82     199   26.74  134.0    4.37    3.58  1474.
  225   4.95  33.83     223   26.78  130.1    4.70    4.29  1473.
  250   4.76  33.84     248   26.81  127.5    5.03    5.07  1473.
  300   4.39  33.88     298   26.88  121.2    5.65    6.82  1472.
  400   4.13  33.97     397   26.98  112.0    6.82   10.97  1473.
  500   3.88  34.07     496   27.08  103.2    7.89   15.89  1473.
  600   3.69  34.14     595   27.16   96.5    8.89   21.46  1474.
  800   3.31  34.26     793   27.28   85.6   10.70   34.37  1476.
 1000   2.96  34.33     990   27.38   77.5   12.32   49.23  1478.
 1200   2.69  34.39    1188   27.45   71.0   13.81   65.88  1480.
 1500   2.34  34.46    1484   27.54   63.4   15.83   93.56  1484.
 2000   1.98  34.54    1976   27.63   55.5   18.79  146.28  1491.

DEEPEST MEASUREMENT:

2005    0.98  34.54    1981   27.70   44.1   18.82  146.79  1486.
```

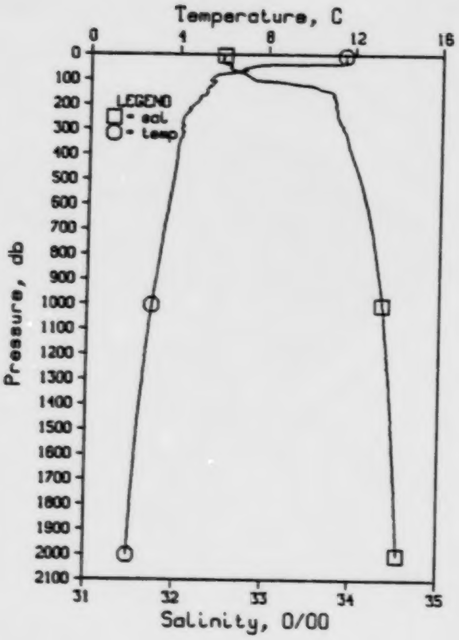


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 36          DATE 29/ 9/87
POSITION  50- 1.5N, 144-56.3W    GMT  0:35     STATION MP26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0  11.58  32.48       0   24.73  321.9    0.00    0.00  1493.
   10  11.58  32.47      10   24.73  322.6    0.32    0.02  1493.
   20  11.58  32.47      20   24.73  323.1    0.65    0.07  1493.
   30  11.56  32.47      30   24.73  322.9    0.97    0.15  1493.
   50   7.86  32.52      50   25.38  261.6    1.59    0.40  1480.
   75   6.58  32.57      75   25.59  241.6    2.22    0.80  1475.
  100   5.44  32.78      99   25.89  213.1    2.79    1.30  1471.
  125   5.40  33.47     124   26.44  161.0    3.27    1.85  1473.
  150   5.21  33.69     149   26.63  143.0    3.64    2.37  1473.
  175   4.98  33.74     174   26.70  136.5    3.99    2.95  1472.
  200   4.69  33.76     199   26.75  132.0    4.32    3.59  1471.
  225   4.48  33.79     223   26.80  128.1    4.65    4.29  1471.
  250   4.34  33.82     248   26.84  124.3    4.96    5.06  1471.
  300   4.16  33.89     298   26.91  118.0    5.57    6.75  1471.
  400   4.00  33.98     397   27.01  109.5    6.71   10.80  1472.
  500   3.84  34.08     496   27.09  102.3    7.76   15.65  1473.
  600   3.66  34.15     595   27.17   95.7    8.75   21.19  1474.
  800   3.25  34.26     793   27.30   84.1   10.55   33.95  1476.
 1000   2.94  34.33     990   27.38   76.9   12.15   48.66  1478.
 1200   2.65  34.40    1188   27.46   70.2   13.62   65.06  1480.
 1500   2.33  34.46    1484   27.54   63.1   15.63   92.62  1484.
 2000   1.96  34.55    1976   27.63   54.8   18.57  144.91  1490.

DEEPEST MEASUREMENT:

2004    1.95  34.55    1980   27.63   54.8   18.59  145.36  1491.
```



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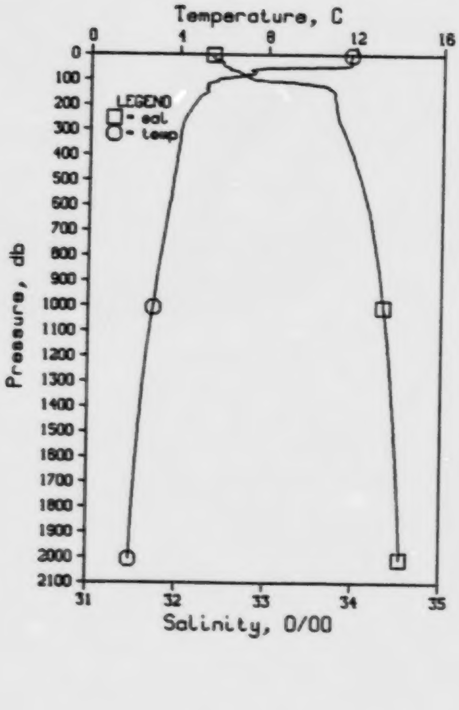
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 37            DATE 29/ 9/87
POSITION   49-59.9N, 144-59.8W     GMT  8:11     STATION MP26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                 T              D        EN
    0  11.53   32.49       0   24.76  320.0    0.00     0.00  1493.
   10  11.53   32.48      10   24.75  321.0    0.32     0.02  1493.
   20  11.53   32.47      20   24.74  321.9    0.64     0.07  1493.
   30  11.51   32.48      30   24.74  321.6    0.96     0.15  1493.
   50   7.24   32.58      50   25.50  249.5    1.53     0.38  1478.
   75   6.20   32.71      75   25.75  226.6    2.14     0.76  1474.
  100   5.39   32.82      99   25.93  209.0    2.68     1.24  1471.
  125   5.39   33.46     124   26.44  161.5    3.14     1.77  1473.
  150   5.24   33.72     149   26.66  140.5    3.52     2.30  1473.
  175   4.89   33.76     174   26.73  133.9    3.86     2.87  1472.
  200   4.63   33.78     199   26.77  130.0    4.19     3.50  1471.
  225   4.44   33.79     223   26.80  127.3    4.52     4.20  1471.
  250   4.20   33.80     248   26.83  124.7    4.83     4.96  1470.
  300   4.10   33.87     298   26.90  119.1    5.44     6.66  1471.
  400   3.93   33.97     397   26.99  110.5    6.58    10.74  1472.
  500   3.81   34.07     496   27.09  102.0    7.65    15.61  1473.
  600   3.61   34.15     595   27.17   95.1    8.63    21.11  1474.
  800   3.25   34.26     793   27.30   84.2   10.41    33.80  1476.
 1000   2.91   34.34     990   27.39   75.9   12.01    48.39  1478.
 1200   2.64   34.40    1188   27.46   69.8   13.45    64.64  1480.
 1500   2.31   34.47    1484   27.54   62.5   15.44    91.87  1484.
 2000   1.93   34.55    1976   27.64   54.3   18.36   143.72  1490.

DEEPEST MEASUREMENT:

2003    1.93   34.55    1979   27.64   54.1   18.37   144.06  1490.
```



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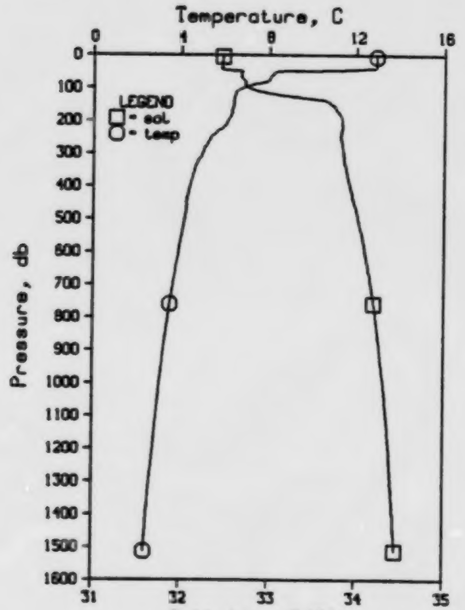
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 38            DATE 30/ 9/87
POSITION   49- 6.0N, 143-36.2W     GMT  5:26     STATION MP27
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                 T              D        EN
    0  11.77   32.37       0   24.61  333.6    0.00     0.00  1493.
   10  11.76   32.36      10   24.61  333.9    0.33     0.02  1493.
   20  11.70   32.43      20   24.67  328.1    0.67     0.07  1494.
   30  11.78   32.47      30   24.69  326.7    0.99     0.15  1494.
   50  10.48   32.52      50   24.96  301.5    1.64     0.41  1490.
   75   7.33   32.69      75   25.58  242.7    2.28     0.82  1479.
  100   5.66   32.83      99.  25.90  212.0    2.85     1.33  1472.
  125   5.19   33.63     124   26.59  146.9    3.29     1.83  1472.
  150   5.22   33.75     149   26.68  138.7    3.64     2.32  1473.
  175   4.88   33.76     174   26.73  134.1    3.98     2.89  1472.
  200   4.64   33.78     199   26.77  130.4    4.31     3.52  1471.
  225   4.47   33.78     223   26.79  128.6    4.64     4.22  1471.
  250   4.27   33.80     248   26.83  125.4    4.95     4.99  1470.
  300   4.08   33.85     298   26.89  119.7    5.57     6.70  1471.
  400   3.93   33.97     397   27.00  109.8    6.71    10.79  1472.
  500   3.76   34.07     496   27.09  101.9    7.78    15.65  1473.
  600   3.60   34.15     595   27.17   95.1    8.76    21.18  1474.
  800   3.24   34.26     793   27.29   84.4   10.55    33.92  1476.
 1000   2.92   34.33     990   27.38   76.7   12.16    48.59  1478.
 1200   2.61   34.40    1188   27.47   69.1   13.61    64.83  1480.
 1500   2.29   34.47    1484   27.55   62.1   15.57    91.83  1484.
 2000   1.94   34.55    1976   27.64   54.2   18.46   143.14  1490.

DEEPEST MEASUREMENT:

2006    1.94   34.55    1982   27.64   54.3   18.49   143.80  1491.
```



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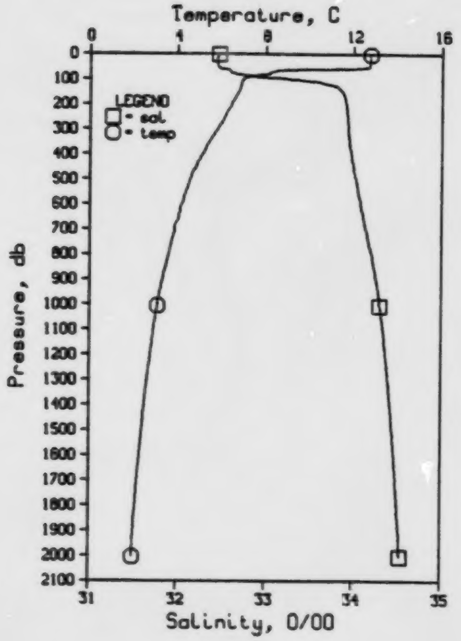
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 39          DATE 30/ 9/87
POSITION  48-34.8N, 141-46.2W     GMT 14:32     STATION OS01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  12.90  32.46       0   24.47  346.8   0.00     0.00  1497.
   10  12.90  32.46      10   24.47  347.1   0.35     0.02  1498.
   20  12.90  32.46      20   24.47  347.8   0.69     0.07  1498.
   30  12.89  32.46      30   24.47  348.0   1.04     0.16  1498.
   50   8.34  32.69      50   25.43  256.5   1.71     0.43  1482.
   75   7.95  32.69      75   25.50  250.7   2.34     0.83  1481.
  100   6.78  32.76      99   25.71  230.6   2.95     1.37  1477.
  125   6.40  33.20     124   26.11  193.1   3.48     1.98  1476.
  150   6.34  33.70     149   26.51  155.6   3.90     2.57  1477.
  175   6.29  33.79     174   26.58  148.8   4.28     3.20  1477.
  200   6.06  33.83     199   26.64  143.2   4.65     3.89  1477.
  225   5.82  33.83     223   26.68  140.0   5.00     4.66  1476.
  250   5.34  33.82     248   26.72  136.0   5.34     5.50  1475.
  300   4.94  33.85     298   26.79  129.7   6.01     7.35  1474.
  400   4.39  33.92     397   26.91  118.7   7.25    11.77  1474.
  500   4.16  34.02     496   27.01  110.0   8.39    16.99  1474.
  600   3.89  34.09     595   27.10  102.2   9.44    22.91  1475.
  800   3.42  34.22     793   27.25   88.9  11.35    36.42  1476.
 1000   3.05  34.31     991   27.36   79.5  13.03    51.82  1478.
 1200   2.78  34.38    1188   27.44   72.5  14.54    68.81  1481.
 1500   2.39  34.46    1484   27.53   64.5  16.60    96.99  1484.

DEEPEST MEASUREMENT:

1512    2.38  34.46    1496   27.53   64.1  16.67    98.17  1484.
```



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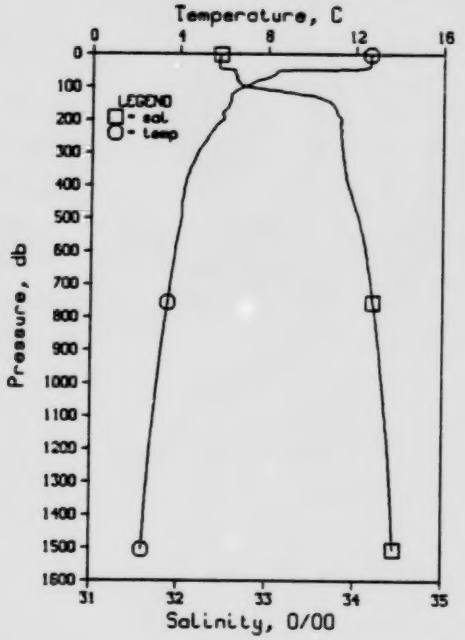
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 40          DATE 30/ 9/87
POSITION  48-34.8N, 140-57.4W     GMT 18:51     STATION OS02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  12.75  32.46       0   24.50  344.1   0.00     0.00  1497.
   10  12.73  32.45      10   24.49  345.3   0.34     0.02  1497.
   20  12.73  32.44      20   24.49  345.9   0.69     0.07  1497.
   30  12.73  32.44      30   24.49  346.4   1.04     0.16  1497.
   50  12.69  32.45      50   24.50  345.1   1.73     0.44  1497.
   75   8.14  32.59      75   25.38  261.3   2.47     0.91  1482.
  100   6.99  33.24      99   26.06  197.4   3.06     1.43  1478.
  125   6.84  33.76     124   26.48  157.4   3.49     1.92  1479.
  150   6.74  33.87     149   26.58  148.3   3.87     2.45  1479.
  175   6.58  33.90     174   26.63  144.3   4.23     3.06  1479.
  200   6.43  33.91     199   26.66  141.7   4.59     3.74  1479.
  225   6.26  33.92     223   26.69  139.3   4.94     4.50  1478.
  250   6.12  33.93     248   26.71  137.2   5.29     5.34  1478.
  300   5.79  33.94     298   26.76  133.1   5.96     7.23  1478.
  400   5.11  33.97     397   26.87  123.2   7.25    11.79  1477.
  500   4.56  34.03     496   26.98  113.9   8.43    17.22  1476.
  600   4.17  34.08     595   27.06  106.5   9.53    23.39  1476.
  800   3.60  34.21     793   27.22   92.1  11.52    37.52  1477.
 1000   3.11  34.30     991   27.34   81.2  13.24    53.26  1479.
 1200   2.79  34.37    1188   27.42   73.9  14.78    70.49  1481.
 1500   2.40  34.45    1484   27.52   65.1  16.85    98.96  1484.
 2000   1.98  34.54    1976   27.63   55.3  19.84   152.06  1491.

DEEPEST MEASUREMENT:

2005    1.97  34.54    1981   27.63   55.4  19.87   152.63  1491.
```



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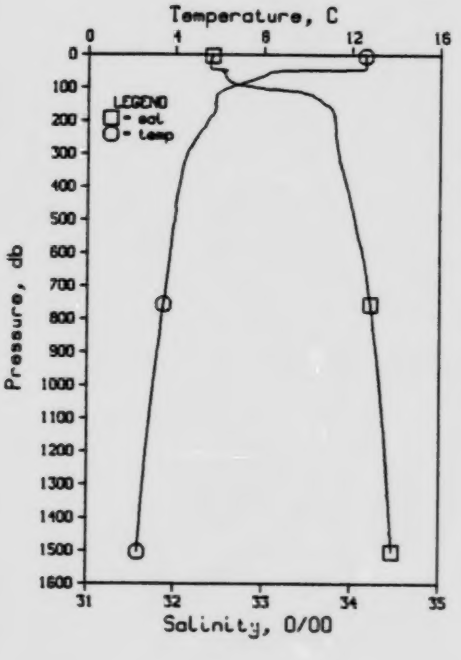
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 41          DATE 30/ 9/87
POSITION  48-34.8N, 140- 8.7W    GMT 23:29    STATION 0S03
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  12.65  32.46       0   24.51  342.9    0.00     0.00  1497.
   10  12.65  32.44      10   24.50  344.0    0.34     0.02  1497.
   20  12.65  32.44      20   24.50  344.7    0.69     0.07  1497.
   30  12.63  32.44      30   24.50  344.5    1.03     0.16  1497.
   50   8.50  32.61      50   25.35  264.0    1.70     0.43  1483.
   75   7.84  32.64      75   25.47  253.0    2.35     0.84  1480.
  100   6.85  32.75      99   25.69  232.3    2.96     1.38  1477.
  125   6.30  33.46     124   26.32  172.7    3.47     1.96  1476.
  150   6.24  33.72     149   26.53  153.0    3.87     2.53  1477.
  175   5.96  33.78     174   26.62  145.2    4.24     3.14  1476.
  200   5.95  33.83     199   26.66  141.5    4.60     3.83  1477.
  225   5.57  33.82     223   26.70  137.9    4.95     4.59  1475.
  250   5.29  33.83     248   26.74  134.5    5.29     5.41  1475.
  300   4.81  33.85     298   26.81  127.8    5.95     7.25  1474.
  400   4.27  33.92     397   26.92  117.9    7.17    11.62  1473.
  500   4.10  34.04     496   27.03  107.9    8.30    16.78  1474.
  600   3.84  34.12     595   27.12   99.8    9.34    22.58  1475.
  800   3.41  34.23     793   27.25   88.6   11.22    35.95  1476.
 1000   3.04  34.31     991   27.36   79.5   12.89    51.29  1478.
 1200   2.72  34.38    1188   27.44   71.8   14.41    68.25  1480.
 1500   2.39  34.45    1484   27.52   64.8   16.45    96.33  1484.

DEEPEST MEASUREMENT:

1506    2.38  34.45    1490   27.53   64.5   16.49    96.93  1484.
```



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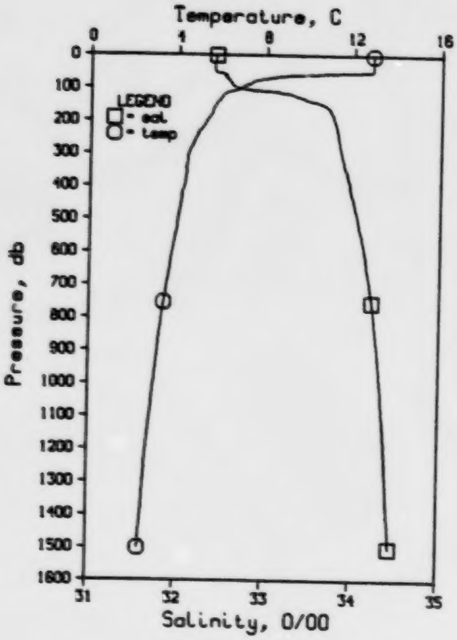
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 42          DATE  1/10/87
POSITION  48-34.8N, 139-20.0W    GMT  4:25    STATION 0S04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  12.60  32.41       0   24.49  345.5    0.00     0.00  1496.
   10  12.60  32.40      10   24.48  346.5    0.35     0.02  1496.
   20  12.61  32.39      20   24.47  347.2    0.69     0.07  1497.
   30  12.61  32.38      30   24.47  347.9    1.04     0.16  1497.
   50   8.69  32.56      50   25.28  271.2    1.71     0.43  1483.
   75   7.53  32.58      75   25.46  253.6    2.36     0.84  1479.
  100   6.40  32.92      99   25.88  213.9    2.96     1.37  1476.
  125   5.84  33.56     124   26.46  159.6    3.40     1.88  1475.
  150   5.77  33.69     149   26.57  149.0    3.79     2.42  1475.
  175   5.74  33.78     174   26.65  142.2    4.15     3.02  1475.
  200   5.43  33.80     199   26.70  137.4    4.50     3.69  1474.
  225   5.21  33.81     223   26.73  134.4    4.84     4.43  1474.
  250   4.95  33.82     248   26.77  131.3    5.17     5.23  1473.
  300   4.52  33.85     298   26.84  124.6    5.81     7.02  1472.
  400   4.16  33.94     397   26.95  114.9    7.01    11.29  1473.
  500   3.97  34.03     496   27.04  106.9    8.11    16.35  1474.
  600   3.78  34.12     595   27.13   99.1    9.14    22.12  1475.
  800   3.37  34.24     793   27.26   87.4   11.01    35.36  1476.
 1000   3.02  34.32     991   27.36   78.6   12.67    50.56  1478.
 1200   2.69  34.39    1188   27.45   71.2   14.16    67.30  1480.
 1500   2.33  34.47    1484   27.54   62.8   16.17    94.85  1484.

DEEPEST MEASUREMENT:

1505    2.33  34.47    1489   27.54   62.6   16.20    95.33  1484.
```



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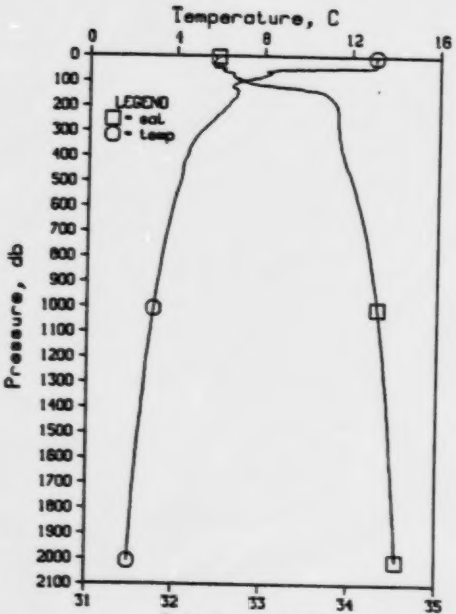
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 43           DATE  1/10/87
POSITION  48-34.8N, 138-31.0W     GMT  8:43     STATION 0505
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.   SOUND
                                T              D        EN
    0  12.83  32.42       0   24.46  348.5    0.00     0.00   1497.
   10  12.83  32.41      10   24.45  349.4    0.35     0.02   1497.
   20  12.83  32.41      20   24.44  350.3    0.70     0.07   1497.
   30  12.83  32.40      30   24.44  350.6    1.05     0.16   1498.
   50  12.79  32.40      50   24.45  350.3    1.75     0.45   1498.
   75   7.69  32.56      75   25.43  256.8    2.47     0.90   1480.
  100   6.80  32.66      99   25.63  238.0    3.09     1.45   1477.
  125   5.96  33.33     124   26.26  178.4    3.61     2.04   1475.
  150   5.70  33.63     149   26.53  152.9    4.02     2.62   1475.
  175   5.53  33.74     174   26.64  143.2    4.39     3.22   1474.
  200   5.26  33.78     199   26.70  137.3    4.74     3.90   1474.
  225   5.02  33.80     224   26.75  132.9    5.08     4.63   1473.
  250   4.80  33.82     248   26.79  129.5    5.40     5.42   1473.
  300   4.46  33.86     298   26.85  123.4    6.04     7.19   1473.
  400   4.27  33.96     397   26.96  114.4    7.23    11.43   1472.
  500   4.01  34.05     496   27.05  106.0    8.33    16.48   1473.
  600   3.75  34.13     595   27.15   97.6    9.35    22.19   1474.
  800   3.31  34.25     793   27.28   85.6   11.18    35.21   1474.
 1000   2.99  34.33     991   27.37   78.0   12.81    50.15   1476.
 1200   2.68  34.39    1188   27.45   71.0   14.29    66.78   1478.
 1500   2.36  34.46    1484   27.53   64.2   16.33    94.71   1484.

DEEPEST MEASUREMENT:

1503    2.36  34.46    1487   27.53   63.9   16.35    95.00   1484.
```



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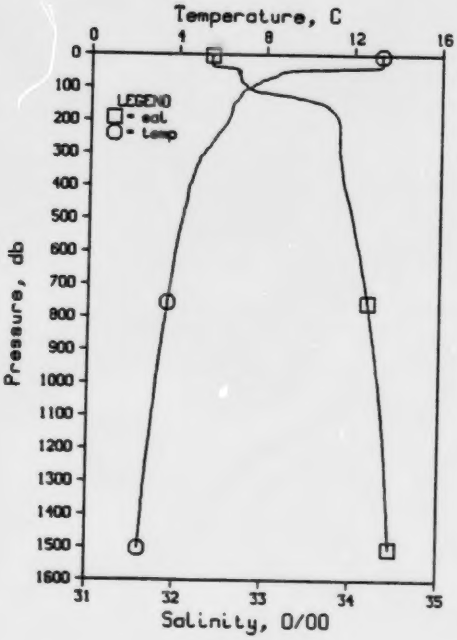
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 44           DATE  1/10/87
POSITION  48-35.0N, 137-42.7W     GMT 12:33     STATION 0506
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.   SOUND
                                T              D        EN
    0  13.07  32.47       0   24.44  349.6    0.00     0.00   1498.
   10  13.06  32.45      10   24.43  351.4    0.35     0.02   1498.
   20  13.06  32.43      20   24.41  352.9    0.70     0.07   1498.
   30  13.06  32.42      30   24.41  353.7    1.06     0.16   1498.
   50  10.47  32.55      50   24.98  299.2    1.75     0.44   1490.
   75   8.13  32.64      75   25.42  257.4    2.42     0.87   1482.
  100   7.00  32.78      99   25.70  231.7    3.04     1.42   1478.
  125   6.51  33.19     124   26.09  195.0    3.58     2.04   1477.
  150   6.76  33.70     149   26.45  161.0    4.02     2.65   1479.
  175   6.55  33.78     174   26.54  152.7    4.41     3.30   1478.
  200   6.33  33.83     199   26.61  146.7    4.78     4.01   1478.
  225   6.05  33.84     224   26.66  142.2    5.14     4.79   1477.
  250   5.76  33.84     248   26.69  139.0    5.49     5.64   1477.
  300   5.15  33.85     298   26.77  131.5    6.17     7.54   1475.
  400   4.53  33.91     397   26.89  121.3    7.43    12.03   1474.
  500   4.23  34.01     496   27.00  111.1    8.59    17.34   1475.
  600   3.91  34.09     595   27.10  102.5    9.66    23.30   1475.
  800   3.43  34.23     793   27.25   88.9   11.56    36.83   1477.
 1000   3.08  34.31     991   27.35   80.1   13.24    52.25   1478.
 1200   2.75  34.38    1188   27.44   72.3   14.76    69.28   1480.
 1500   2.38  34.46    1484   27.53   64.4   16.82    97.49   1484.
 2000   1.96  34.55    1976   27.64   54.7   19.78   150.16   1491.

DEEPEST MEASUREMENT:

2010    1.96  34.55    1986   27.64   54.7   19.84   151.28   1491.
```



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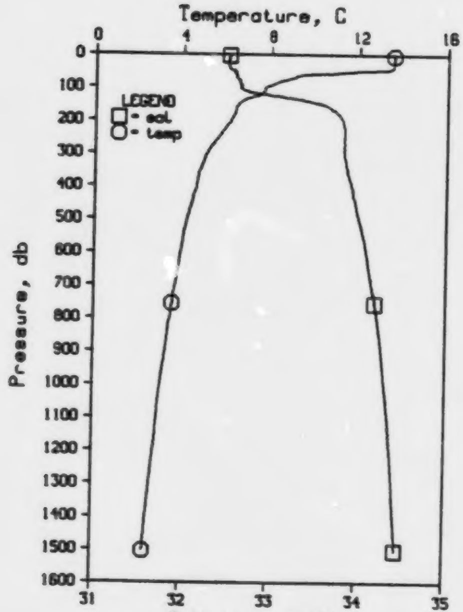
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 45          DATE  1/10/87
POSITION  48- 2.4N, 137-43.6W   GMT 17: 9    STATION OS12
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL    DEPTH   SIGMA   SVA    DELTA    POT.  SOUND
                                 T              D       EN
    0  13.23  32.38       0   24.34  359.5    0.00    0.00  1498.
   10  13.23  32.37      10   24.33  360.3    0.36    0.02  1499.
   20  13.23  32.36      20   24.33  361.0    0.72    0.07  1499.
   30  13.24  32.35      30   24.33  361.4    1.08    0.17  1499.
   50   8.95  32.70      50   25.35  264.3    1.73    0.43  1484.
   75   8.01  32.70      75   25.49  251.2    2.37    0.84  1481.
  100   7.27  32.78      99   25.66  235.3    2.98    1.38  1479.
  125   6.81  33.22     124   26.07  196.6    3.53    2.01  1478.
  150   6.47  33.64     149   26.44  161.5    3.98    2.63  1478.
  175   6.40  33.77     174   26.55  151.5    4.37    3.27  1478.
  200   6.26  33.82     199   26.61  146.1    4.74    3.98  1478.
  225   6.02  33.83     224   26.65  142.5    5.10    4.76  1477.
  250   5.73  33.83     248   26.69  139.3    5.45    5.61  1477.
  300   5.19  33.84     298   26.76  132.8    6.13    7.52  1475.
  400   4.52  33.90     397   26.88  121.9    7.40   12.04  1474.
  500   4.23  34.00     496   26.99  112.3    8.57   17.40  1475.
  600   3.94  34.08     595   27.08  104.0    9.65   23.45  1475.
  800   3.50  34.20     793   27.22   91.4   11.60   37.30  1477.
 1000   3.10  34.31     991   27.35   80.4   13.31   53.00  1478.
 1200   2.78  34.38    1188   27.44   72.5   14.84   70.14  1481.
 1500   2.40  34.45    1484   27.52   64.7   16.89   98.32  1484.

DEEPEST MEASUREMENT:

1505    2.39   34.46   1489   27.53   64.3   16.93   98.81  1484.
```



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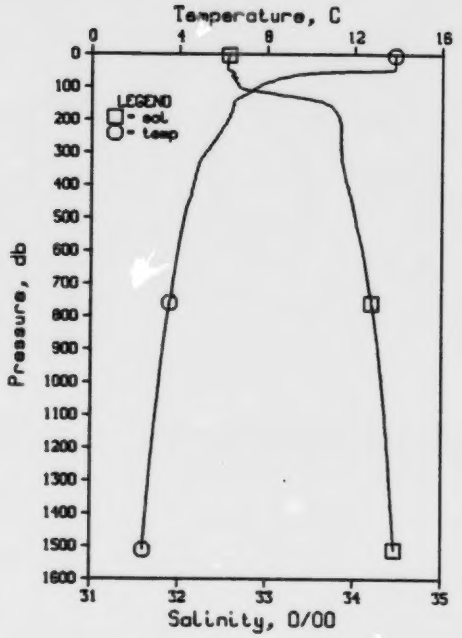
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 46          DATE  1/10/87
POSITION  47-30.0N, 137-44.5W   GMT 22:24    STATION OS18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL    DEPTH   SIGMA   SVA    DELTA    POT.  SOUND
                                 T              D       EN
    0  13.54  32.52       0   24.39  355.1    0.00    0.00  1500.
   10  13.55  32.51      10   24.38  356.0    0.36    0.02  1500.
   20  13.52  32.51      20   24.38  355.9    0.71    0.07  1500.
   30  13.50  32.51      30   24.39  355.6    1.07    0.16  1500.
   50  11.88  32.57      50   24.76  320.9    1.77    0.45  1495.
   75   8.75  32.61      75   25.31  268.0    2.48    0.90  1484.
  100   7.70  32.64      99   25.49  251.4    3.13    1.48  1480.
  125   7.37  33.00     124   25.82  220.7    3.73    2.17  1480.
  150   6.49  33.58     149   26.39  166.7    4.21    2.83  1478.
  175   6.36  33.74     174   26.53  153.4    4.60    3.48  1478.
  200   6.17  33.82     199   26.62  145.4    4.97    4.20  1477.
  225   5.90  33.83     224   26.67  141.0    5.33    4.97  1477.
  250   5.61  33.83     248   26.70  137.9    5.68    5.81  1476.
  300   5.09  33.83     298   26.77  132.2    6.35    7.70  1475.
  400   4.62  33.92     397   26.89  121.3    7.62   12.21  1475.
  500   4.21  34.01     496   27.00  111.4    8.79   17.55  1475.
  600   3.94  34.09     595   27.09  103.2    9.85   23.52  1475.
  800   3.47  34.22     793   27.24   89.7   11.77   37.19  1477.
 1000   3.07  34.31     991   27.35   79.8   13.46   52.65  1478.
 1200   2.77  34.38    1188   27.44   72.5   14.99   69.69  1480.
 1500   2.37  34.46    1484   27.53   64.1   17.03   97.78  1484.

DEEPEST MEASUREMENT:

1505    2.36   34.46   1489   27.53   63.8   17.06   98.26  1484.
```



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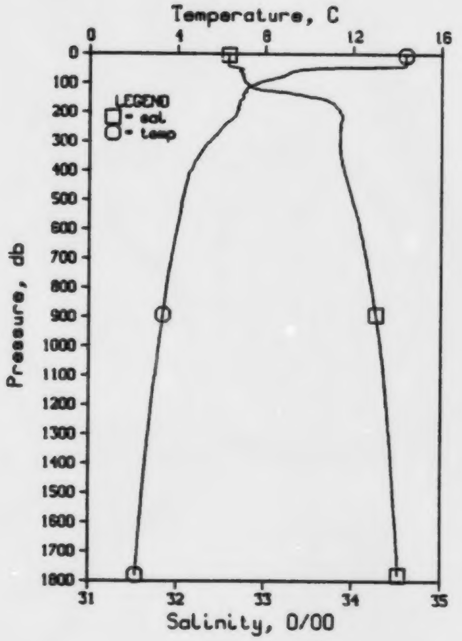
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 47          DATE  2/10/87
POSITION   46-57.6N, 137-45.9W   GMT  3: 8     STATION OS24
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  13.83  32.56       0   24.36  357.7   0.00     0.00  1501.
   10  13.83  32.55      10   24.35  358.5   0.36     0.02  1501.
   20  13.83  32.54      20   24.35  359.4   0.72     0.07  1501.
   30  13.83  32.54      30   24.34  359.8   1.08     0.16  1501.
   50  13.22  32.55      50   24.47  348.0   1.79     0.46  1499.
   75   8.45  32.62      75   25.36  263.6   2.51     0.91  1483.
  100   7.55  32.67      99   25.54  247.1   3.14     1.48  1480.
  125   6.94  33.14     124   25.99  204.5   3.72     2.13  1478.
  150   6.41  33.66     149   26.46  159.8   4.16     2.75  1477.
  175   6.37  33.78     174   26.57  149.9   4.54     3.38  1478.
  200   6.16  33.82     199   26.62  145.2   4.91     4.09  1477.
  225   5.95  33.84     224   26.66  141.5   5.27     4.86  1477.
  250   5.72  33.84     248   26.69  138.9   5.62     5.71  1476.
  300   5.17  33.85     298   26.77  132.1   6.30     7.62  1475.
  400   4.62  33.92     397   26.88  121.5   7.57    12.14  1475.
  500   4.21  34.01     496   27.00  111.2   8.73    17.46  1475.
  600   3.94  34.09     595   27.09  102.8   9.80    23.46  1475.
  800   3.46  34.22     793   27.24   89.4  11.73    37.13  1477.
 1000   3.09  34.31     991   27.35   80.1  13.41    52.57  1478.
 1200   2.77  34.38    1188   27.43   73.0  14.93    69.64  1480.
 1500   2.38  34.46    1484   27.53   64.1  16.98    97.76  1484.

DEEPEST MEASUREMENT:

1511    2.37  34.46    1495   27.53   63.9  17.05    98.84  1484.
```



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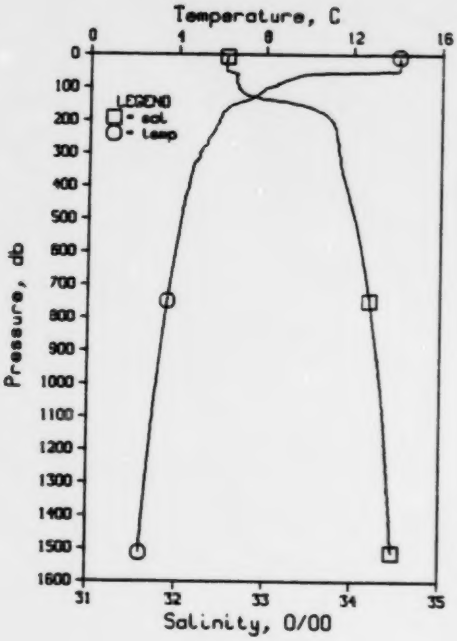
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 48          DATE  2/10/87
POSITION   46-25.3N, 137-46.2W   GMT  7:39     STATION OS30
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  14.35  32.58       0   24.27  366.5   0.00     0.00  1502.
   10  14.35  32.58      10   24.27  366.7   0.37     0.02  1502.
   20  14.35  32.57      20   24.26  367.3   0.73     0.07  1503.
   30  14.35  32.57      30   24.26  368.0   1.10     0.17  1503.
   50  10.15  32.71      50   25.16  282.1   1.80     0.45  1489.
   75   8.83  32.73      75   25.39  260.6   2.47     0.88  1484.
  100   7.63  32.79      99   25.61  239.6   3.09     1.43  1480.
  125   7.09  32.99     124   25.85  217.6   3.67     2.09  1479.
  150   6.97  33.59     149   26.34  171.7   4.15     2.76  1480.
  175   6.79  33.79     174   26.52  154.9   4.55     3.43  1479.
  200   6.68  33.85     199   26.58  149.7   4.93     4.15  1480.
  225   6.43  33.87     224   26.63  145.1   5.30     4.95  1479.
  250   6.04  33.85     248   26.66  141.8   5.66     5.82  1478.
  300   5.47  33.85     298   26.73  135.8   6.35     7.76  1476.
  400   4.59  33.90     397   26.87  122.8   7.64    12.36  1474.
  500   4.21  33.99     496   26.98  112.7   8.82    17.74  1475.
  600   3.99  34.08     595   27.08  104.5   9.90    23.80  1475.
  800   3.50  34.21     793   27.23   90.8  11.84    37.61  1477.
 1000   3.15  34.31     991   27.35   80.6  13.55    53.28  1479.
 1200   2.81  34.38    1188   27.43   73.0  15.09    70.46  1481.
 1500   2.42  34.46    1484   27.53   64.3  17.14    98.66  1484.

DEEPEST MEASUREMENT:

1779    2.11  34.52    1759   27.60   57.7  18.84   126.96  1487.
```



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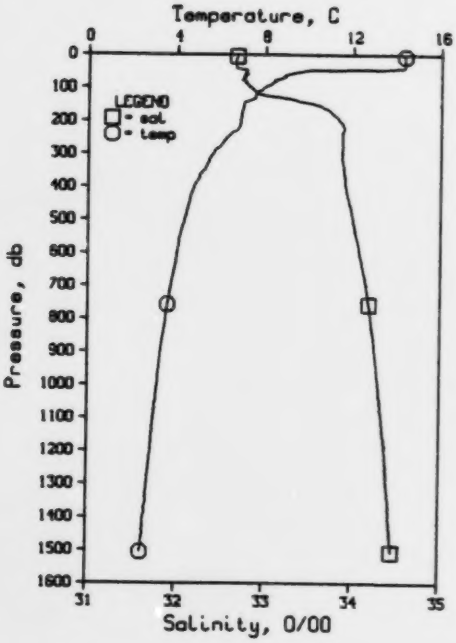
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 49          DATE  2/10/87
POSITION  46-24.6N, 138-33.2W    GMT 12:33     STATION 0S29
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0  14.05  32.55      0   24.31  362.7   0.00    0.00  1501.
   10  14.04  32.55     10   24.31  362.9   0.36    0.02  1501.
   20  14.05  32.54     20   24.30  363.7   0.73    0.07  1502.
   30  14.05  32.54     30   24.30  364.4   1.09    0.17  1502.
   50  13.99  32.53     50   24.31  364.1   1.82    0.46  1502.
   75   9.04  32.67     75   25.31  268.6   2.55    0.92  1485.
  100   8.08  32.67     99   25.46  254.5   3.20    1.51  1482.
  125   7.55  32.78    124   25.62  239.3   3.82    2.22  1480.
  150   6.65  33.31    149   26.16  188.5   4.36    2.97  1478.
  175   6.01  33.64    174   26.50  156.0   4.78    3.67  1476.
  200   5.85  33.75    199   26.61  146.5   5.16    4.39  1476.
  225   5.70  33.80    224   26.67  141.1   5.52    5.16  1476.
  250   5.44  33.81    248   26.70  137.9   5.87    6.01  1475.
  300   4.96  33.84    298   26.78  130.4   6.54    7.89  1474.
  400   4.52  33.92    397   26.90  120.1   7.79   12.35  1474.
  500   4.16  34.02    496   27.02  109.5   8.94   17.59  1474.
  600   3.91  34.10    595   27.11  101.6   9.99   23.50  1475.
  800   3.46  34.22    793   27.24   89.9  11.89   37.05  1477.
 1000   3.09  34.31    991   27.35   79.9  13.58   52.52  1478.
 1200   2.78  34.39   1188   27.44   72.3  15.10   69.47  1481.
 1500   2.39  34.46   1484   27.53   63.9  17.14   97.47  1484.

DEEPEST MEASUREMENT:

1512    2.37  34.47   1496   27.54   63.2  17.21   98.64  1484.
```



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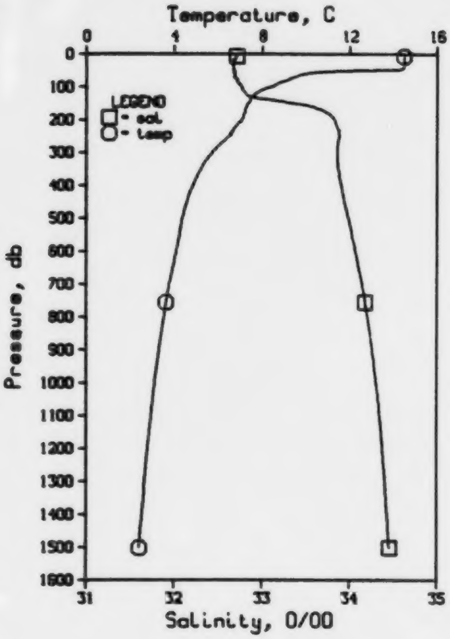
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 50          DATE  2/10/87
POSITION  46-25.3N, 139-20.0W    GMT 17:31     STATION 0S28
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0  14.33  32.67      0   24.34  359.3   0.00    0.00  1502.
   10  14.33  32.67     10   24.34  359.9   0.36    0.02  1503.
   20  14.33  32.66     20   24.33  360.6   0.72    0.07  1503.
   30  14.33  32.66     30   24.33  361.0   1.08    0.17  1503.
   50   9.73  32.77     50   25.28  271.1   1.76    0.44  1487.
   75   8.50  32.73     75   25.45  255.5   2.41    0.85  1483.
  100   7.90  32.83     99   25.61  239.9   3.03    1.41  1481.
  125   7.52  33.04    124   25.83  220.0   3.61    2.07  1481.
  150   7.00  33.56    149   26.31  174.6   4.10    2.76  1480.
  175   6.92  33.75    174   26.47  159.6   4.51    3.44  1480.
  200   6.84  33.85    199   26.56  151.7   4.90    4.18  1480.
  225   6.73  33.90    224   26.61  147.0   5.28    4.99  1480.
  250   6.24  33.88    248   26.66  142.5   5.64    5.87  1479.
  300   5.63  33.87    298   26.73  135.8   6.33    7.82  1477.
  400   4.76  33.92    397   26.87  123.3   7.63   12.42  1475.
  500   4.34  34.00    496   26.98  113.1   8.81   17.83  1475.
  600   4.01  34.08    595   27.07  104.9   9.90   23.93  1475.
  800   3.50  34.21    793   27.23   90.7  11.84   37.76  1477.
 1000   3.13  34.30    991   27.34   81.5  13.56   53.47  1479.
 1200   2.85  34.38   1188   27.43   73.4  15.10   70.75  1481.
 1500   2.44  34.47   1484   27.53   64.2  17.16   99.08  1484.

DEEPEST MEASUREMENT:

1506    2.43  34.47   1490   27.54   63.8  17.20   99.67  !484.
```

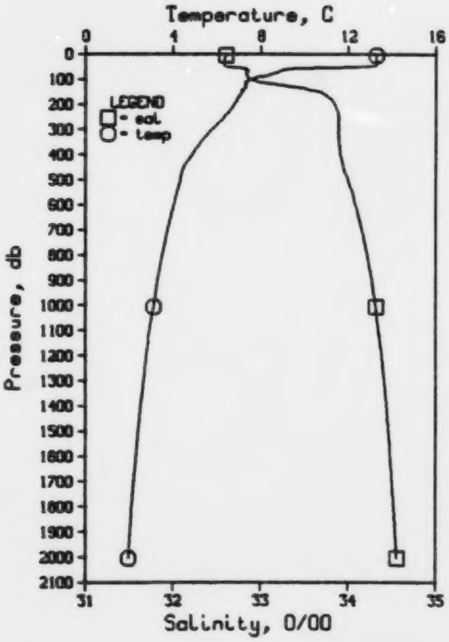


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 51           DATE  2/10/87
POSITION  46-25.3N, 140- 6.9W   GMT 22:30     STATION 0S27
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS    TEMP     SAL   DEPTH    SIGMA    SVA    DELTA      POT.   SOUND
                                   T               D          EN
    0   14.48   32.70       0    24.34   359.9    0.00      0.00   1503.
   10   14.47   32.69      10    24.33   360.8    0.36      0.02   1503.
   20   14.47   32.67      20    24.31   362.6    0.72      0.07   1503.
   30   14.47   32.66      30    24.30   363.7    1.09      0.17   1503.
   50   12.45   32.67      50    24.72   324.5    1.81      0.46   1497.
   75    9.25   32.69      75    25.29   270.2    2.52      0.91   1486.
  100    8.37   32.75      99    25.48   252.6    3.17      1.49   1483.
  125    7.58   32.81     124    25.64   237.3    3.78      2.19   1480.
  150    7.32   33.33     149    26.08   195.8    4.33      2.96   1481.
  175    7.17   33.71     174    26.40   166.1    4.77      3.69   1481.
  200    7.03   33.82     199    26.51   156.4    5.17      4.46   1481.
  225    6.69   33.85     224    26.58   150.0    5.55      5.29   1480.
  250    6.48   33.88     248    26.63   145.5    5.92      6.18   1480.
  300    5.70   33.85     298    26.71   138.2    6.63      8.16   1477.
  400    4.82   33.90     397    26.85   125.0    7.95     12.85   1475.
  500    4.34   33.98     496    26.96   114.6    9.15     18.34   1475.
  600    4.07   34.06     595    27.05   106.7   10.25     24.54   1476.
  800    3.51   34.20     793    27.22    91.5   12.22     38.56   1477.
 1000    3.11   34.30     991    27.34    81.1   13.94     54.29   1479.
 1200    2.78   34.38    1188    27.43    73.1   15.48     71.50   1481.
 1500    2.41   34.45    1484    27.52    64.8   17.55     99.92   1484.

DEEPEST MEASUREMENT:

1503     2.40   34.46    1487    27.52    64.6   17.57    100.21   1484.
```



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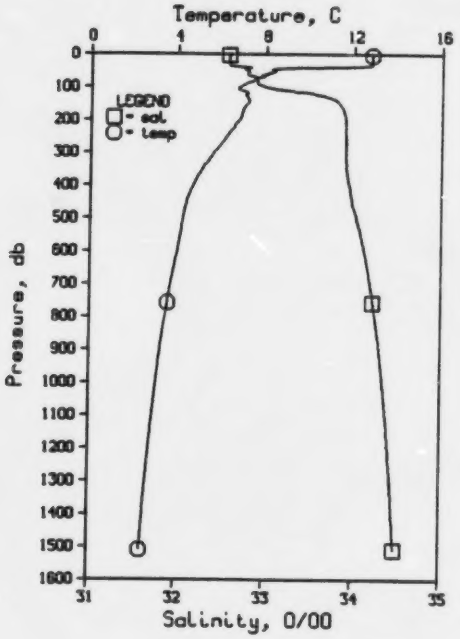
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 52           DATE  3/10/87
POSITION  46-24.6N, 140-54.6W   GMT  3:58     STATION 0S26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS    TEMP     SAL   DEPTH    SIGMA    SVA    DELTA      POT.   SOUND
                                   T               D          EN
    0   13.25   32.59       0    24.50   344.0    0.00      0.00   1499.
   10   13.25   32.59      10    24.50   344.5    0.34      0.02   1499.
   20   13.26   32.58      20    24.49   345.3    0.69      0.07   1499.
   30   13.26   32.57      30    24.48   346.5    1.04      0.16   1499.
   50   12.61   32.60      50    24.63   332.7    1.73      0.44   1497.
   75    8.64   32.83      75    25.50   250.1    2.40      0.86   1484.
  100    7.50   32.89      99    25.71   230.5    3.00      1.40   1480.
  125    7.28   33.26     124    26.04   200.0    3.55      2.03   1480.
  150    7.15   33.68     149    26.38   167.9    4.00      2.67   1480.
  175    6.91   33.78     174    26.49   157.1    4.41      3.34   1480.
  200    6.73   33.84     199    26.56   150.9    4.79      4.07   1480.
  225    6.57   33.87     224    26.61   147.0    5.17      4.88   1480.
  250    6.30   33.89     248    26.66   142.4    5.53      5.75   1479.
  300    5.75   33.88     298    26.73   136.4    6.23      7.71   1477.
  400    4.85   33.90     397    26.85   125.4    7.53     12.36   1475.
  500    4.31   33.99     496    26.97   113.6    8.72     17.80   1475.
  600    4.02   34.08     595    27.08   104.5    9.81     23.90   1476.
  800    3.49   34.21     793    27.24    90.4   11.75     37.72   1477.
 1000    3.11   34.31     991    27.35    80.2   13.45     53.31   1479.
 1200    2.77   34.38    1188    27.43    72.6   14.98     70.44   1480.
 1500    2.40   34.46    1484    27.53    64.2   17.04     98.63   1484.
 2000    1.97   34.55    1976    27.64    54.6   19.99    151.15   1491.

DEEPEST MEASUREMENT:

2005     1.96   34.55    1981    27.64    54.4   20.02    151.71   1491.
```



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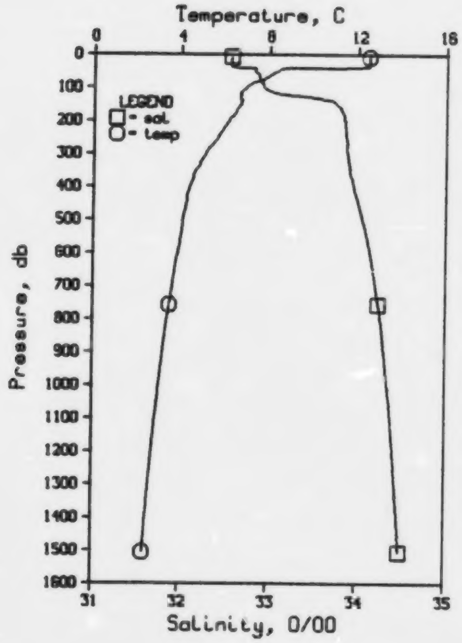
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 53          DATE  3/10/87
POSITION   46-25.3N, 141-40.7W   GMT  9:15     STATION 0S25
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS    TEMP     SAL   DEPTH    SIGMA    SVA   DELTA      POT.  SOUND
                                   T              D         EN
    0   12.79   32.57       0    24.58  337.1    0.00      0.00  1497.
   10   12.80   32.57      10    24.58  337.3    0.34      0.02  1497.
   20   12.80   32.57      20    24.57  337.6    0.67      0.07  1497.
   30   12.79   32.57      30    24.58  337.6    1.01      0.15  1498.
   50    8.35   32.77      50    25.50  250.1    1.60      0.39  1482.
   75    7.50   32.88      75    25.71  230.6    2.20      0.77  1479.
  100    6.78   32.97      99    25.88  214.6    2.76      1.27  1477.
  125    7.03   33.60     124    26.34  171.4    3.25      1.83  1479.
  150    7.15   33.82     149    26.49  156.9    3.65      2.39  1481.
  175    6.92   33.88     174    26.57  150.1    4.03      3.03  1480.
  200    6.77   33.90     199    26.61  146.9    4.41      3.74  1480.
  225    6.52   33.90     224    26.64  143.8    4.77      4.52  1479.
  250    6.22   33.91     248    26.68  140.0    5.12      5.38  1479.
  300    5.63   33.91     298    26.76  133.3    5.81      7.30  1477.
  400    4.72   33.95     397    26.90  120.6    7.08     11.82  1475.
  500    4.25   34.03     496    27.01  110.0    8.23     17.10  1475.
  600    4.02   34.12     595    27.11  101.5    9.29     23.01  1476.
  800    3.48   34.25     793    27.26   87.6   11.16     36.38  1477.
 1000    3.08   34.34     991    27.38   77.6   12.81     51.43  1478.
 1200    2.78   34.41    1188    27.46   70.4   14.29     68.02  1481.
 1500    2.41   34.49    1484    27.55   62.2   16.28     95.35  1484.

DEEPEST MEASUREMENT:

 1509    2.40   34.49    1493    27.55   62.0   16.34     96.21  1484.
```



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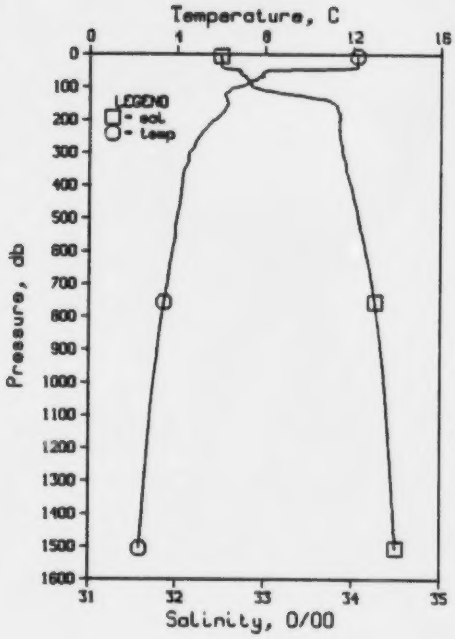
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 54          DATE  3/10/87
POSITION   46-57.6N, 141-42.0W   GMT 13:13     STATION 0S19
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS    TEMP     SAL   DEPTH    SIGMA    SVA   DELTA      POT.  SOUND
                                   T              D         EN
    0   12.48   32.56       0    24.63  331.7    0.00      0.00  1496.
   10   12.48   32.56      10    24.63  332.3    0.33      0.02  1496.
   20   12.48   32.56      20    24.63  332.7    0.66      0.07  1496.
   30   12.48   32.56      30    24.62  333.1    1.00      0.15  1497.
   50    8.37   32.83      50    25.54  246.1    1.58      0.39  1482.
   75    7.71   32.88      75    25.68  233.2    2.18      0.77  1480.
  100    6.91   32.93      99    25.82  219.7    2.74      1.27  1478.
  125    6.64   33.31     124    26.16  188.4    3.26      1.87  1477.
  150    6.71   33.74     149    26.49  157.0    3.68      2.45  1479.
  175    6.46   33.82     174    26.58  148.7    4.06      3.08  1478.
  200    6.16   33.85     199    26.65  142.9    4.42      3.77  1477.
  225    5.91   33.85     224    26.68  139.7    4.78      4.54  1477.
  250    5.68   33.86     248    26.72  136.4    5.12      5.38  1476.
  300    5.12   33.88     298    26.80  129.3    5.79      7.24  1475.
  400    4.40   33.95     397    26.93  116.8    7.02     11.61  1474.
  500    4.10   34.05     496    27.04  106.9    8.13     16.73  1474.
  600    3.90   34.14     595    27.14   98.7    9.16     22.49  1475.
  800    3.41   34.26     793    27.28   86.0   11.00     35.60  1476.
 1000    3.05   34.34     991    27.38   77.3   12.63     50.51  1478.
 1200    2.74   34.41    1188    27.46   69.9   14.10     66.96  1480.
 1500    2.37   34.49    1484    27.56   61.4   16.07     93.96  1484.

DEEPEST MEASUREMENT:

 1506    2.36   34.49    1490    27.56   61.2   16.11     94.52  1484.
```



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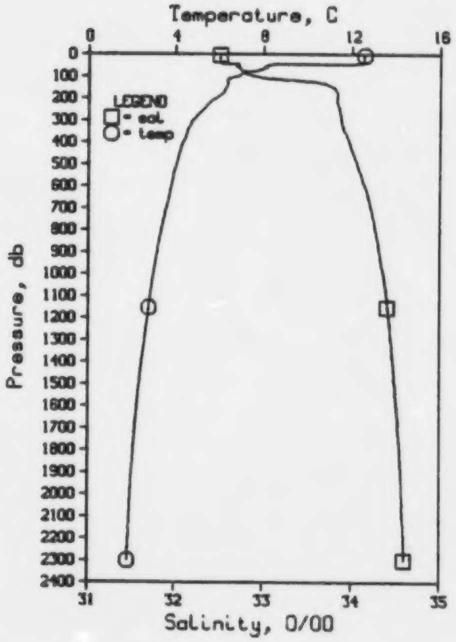
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 55         DATE  3/10/87
POSITION  47-30.0N, 141-43.3W   GMT 17:21     STATION 0S13
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                 T              D        EN
    0  12.17   32.50       0   24.64  331.0    0.00     0.00  1495.
   10  12.17   32.50      10   24.64  331.2    0.33     0.02  1495.
   20  12.17   32.50      20   24.64  331.1    0.66     0.07  1495.
   30  12.17   32.50      30   24.64  331.6    0.99     0.15  1495.
   50   8.05   32.71      50   25.49  250.7    1.62     0.41  1481.
   75   7.59   32.70      75   25.62  239.0    2.24     0.80  1480.
  100   6.70   32.85      99   25.79  222.6    2.81     1.31  1477.
  125   6.16   33.39     124   26.28  176.1    3.32     1.89  1476.
  150   6.30   33.78     149   26.57  149.5    3.72     2.45  1477.
  175   6.11   33.83     174   26.64  143.4    4.09     3.05  1477.
  200   5.71   33.84     199   26.69  138.2    4.44     3.72  1476.
  225   5.32   33.84     223   26.74  133.7    4.78     4.46  1474.
  250   5.03   33.84     248   26.78  130.5    5.11     5.26  1474.
  300   4.56   33.87     298   26.85  123.4    5.74     7.03  1473.
  400   4.23   33.97     397   26.97  113.2    6.92    11.24  1473.
  500   4.00   34.06     496   27.06  105.1    8.01    16.24  1474.
  600   3.80   34.15     595   27.15   97.4    9.03    21.92  1475.
  800   3.32   34.27     793   27.30   84.1   10.83    34.79  1476.
 1000   2.95   34.36     991   27.40   75.0   12.42    49.30  1478.
 1200   2.67   34.42    1188   27.47   68.9   13.85    65.35  1480.
 1500   2.33   34.49    1484   27.56   61.5   15.80    92.09  1484.

DEEPEST MEASUREMENT:

1506    2.33   34.50    1490   27.56   60.8   15.84    92.65  1484.
```



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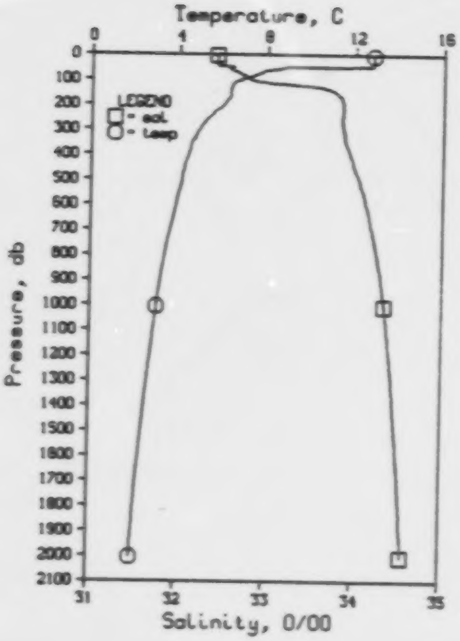
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 56         DATE  3/10/87
POSITION  48- 2.4N, 141-44.8W   GMT 20:51     STATION 0S07
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                 T              D        EN
    0  12.53   32.50       0   24.57  337.2    0.00     0.00  1496.
   10  12.53   32.50      10   24.57  337.4    0.34     0.02  1496.
   20  12.52   32.50      20   24.58  337.5    0.67     0.07  1496.
   30  12.51   32.50      30   24.58  337.7    1.01     0.15  1497.
   50   8.19   32.71      50   25.47  252.7    1.64     0.41  1481.
   75   7.64   32.75      75   25.59  242.1    2.27     0.81  1480.
  100   6.84   32.87      99   25.79  223.0    2.85     1.32  1477.
  125   6.34   33.50     124   26.35  170.0    3.34     1.89  1476.
  150   6.31   33.77     149   26.56  150.1    3.74     2.44  1477.
  175   6.16   33.83     174   26.63  144.1    4.10     3.04  1477.
  200   5.84   33.83     199   26.67  140.6    4.46     3.72  1476.
  225   5.50   33.83     223   26.72  136.2    4.80     4.47  1475.
  250   5.27   33.85     248   26.76  132.6    5.14     5.29  1475.
  300   4.80   33.88     298   26.83  125.8    5.79     7.09  1474.
  400   4.33   33.96     397   26.95  115.1    6.99    11.39  1473.
  500   4.04   34.05     496   27.05  105.9    8.10    16.46  1474.
  600   3.82   34.13     595   27.14   98.4    9.12    22.16  1475.
  800   3.36   34.26     793   27.29   85.3   10.94    35.11  1476.
 1000   3.00   34.36     991   27.39   75.8   12.54    49.83  1478.
 1200   2.73   34.42    1188   27.47   69.1   13.99    66.01  1480.
 1500   2.35   34.49    1484   27.56   61.5   15.95    92.88  1484.
 2000   1.96   34.57    1976   27.65   53.1   18.79   143.40  1491.

DEEPEST MEASUREMENT:

2302    1.82   34.60    2273   27.69   50.4   20.35   177.60  1495.
```



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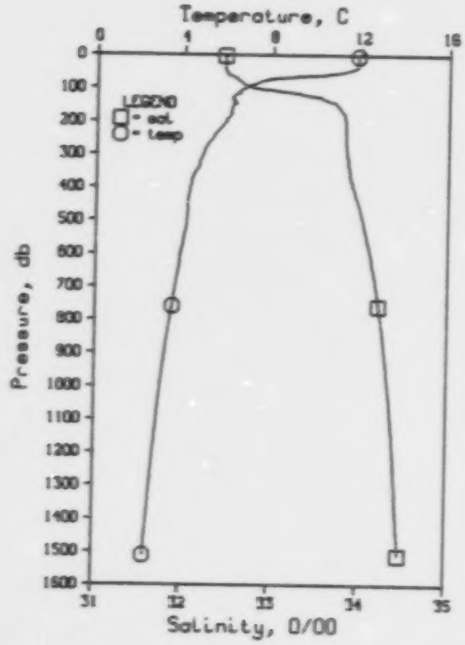
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 57          DATE  4/10/87
POSITION  48- 2.3N, 140-57.0W     GMT  0:52     STATION 0508
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.   SOUND
                                T              D       EN
    0  12.77  32.42       0   24.47  347.5   0.00    0.00  1497.
   10  12.77  32.43      10   24.47  347.5   0.35    0.02  1497.
   20  12.78  32.43      20   24.47  347.3   0.69    0.07  1497.
   30  12.77  32.43      30   24.47  347.6   1.04    0.16  1497.
   50   8.88  32.60      50   25.28  270.5   1.73    0.44  1484.
   75   7.60  32.69      75   25.54  246.1   2.38    0.85  1480.
  100   6.73  32.79      99   25.74  227.6   2.97    1.38  1477.
  125   6.36  33.42     124   26.29  176.0   3.49    1.97  1476.
  150   6.31  33.76     149   26.56  150.7   3.88    2.52  1477.
  175   6.25  33.83     174   26.62  144.9   4.25    3.13  1477.
  200   6.03  33.85     199   26.67  141.0   4.61    3.82  1477.
  225   5.66  33.85     224   26.71  136.6   4.96    4.57  1476.
  250   5.38  33.85     248   26.74  134.3   5.30    5.39  1475.
  300   4.92  33.86     298   26.80  128.3   5.95    7.23  1474.
  400   4.43  33.94     397   26.92  117.8   7.19   11.62  1474.
  500   4.15  34.04     496   27.03  107.8   8.31   16.79  1474.
  600   3.88  34.12     595   27.12  100.3   9.35   22.59  1475.
  800   3.38  34.25     793   27.28   86.3  11.21   35.80  1476.
 1000   3.03  34.34     991   27.38   77.1  12.84   50.74  1478.
 1200   2.77  34.41    1188   27.45   70.8  14.32   67.31  1480.
 1500   2.40  34.48    1484   27.54   62.9  16.32   94.76  1484.
 2000   1.96  34.57    1976   27.65   53.0  19.19  145.80  1491.

DEEPEST MEASUREMENT:

2005    1.95  34.57    1981   27.65   52.9  19.22  146.34  1491.
```



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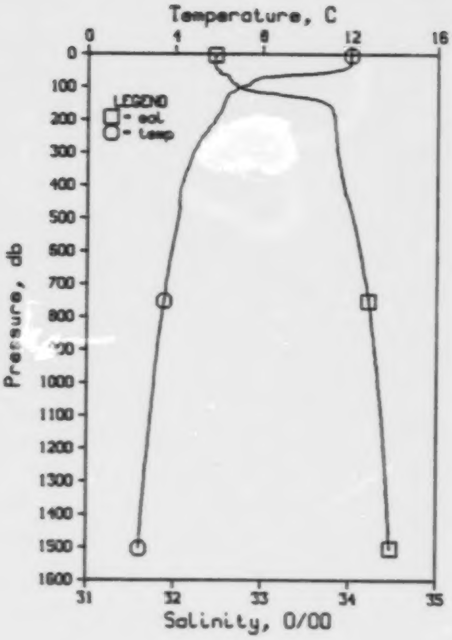
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 58          DATE  5/10/87
POSITION  48- 2.5N, 140- 0.2W     GMT  2:38     STATION 0509
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.   SOUND
                                T              D       EN
    0  11.84  32.46       0   24.67  328.0   0.00    0.00  1494.
   10  11.84  32.46      10   24.67  328.1   0.33    0.02  1494.
   20  11.82  32.46      20   24.67  328.4   0.66    0.07  1494.
   30  11.83  32.46      30   24.67  328.7   0.99    0.15  1494.
   50  11.22  32.47      50   24.79  317.5   1.64    0.42  1492.
   75   7.76  32.60      75   25.45  255.3   2.36    0.87  1480.
  100   6.76  32.78      99   25.72  229.1   2.96    1.41  1477.
  125   6.23  33.44     124   26.32  173.1   3.46    1.97  1476.
  150   6.20  33.72     149   26.54  152.7   3.86    2.54  1477.
  175   6.14  33.80     174   26.61  145.9   4.23    3.15  1477.
  200   5.92  33.83     199   26.66  141.6   4.59    3.84  1476.
  225   5.59  33.83     223   26.70  138.0   4.94    4.60  1476.
  250   5.32  33.83     248   26.73  134.9   5.28    5.42  1475.
  300   4.87  33.84     298   26.80  129.1   5.94    7.26  1474.
  400   4.28  33.91     397   26.91  118.6   7.18   11.67  1473.
  500   4.15  34.03     496   27.02  109.0   8.31   16.87  1474.
  600   3.88  34.11     595   27.12  100.7   9.36   22.74  1475.
  800   3.42  34.24     793   27.27   87.4  11.24   36.11  1476.
 1000   3.03  34.33     991   27.37   77.9  12.89   51.20  1478.
 1200   2.72  34.40    1188   27.46   70.4  14.37   67.78  1480.
 1500   2.35  31.47    1484   27.54   62.7  16.37   95.24  1484.

DEEPEST MEASUREMENT:

1511    2.34  34.48    1495   27.55   62.4  16.43   96.29  1484.
```

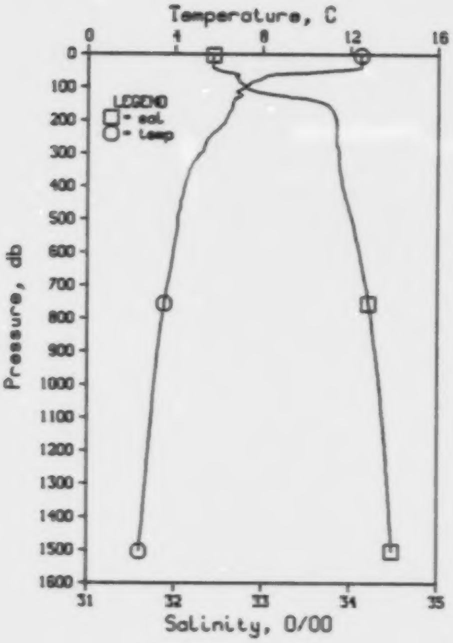


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 59          DATE  5/10/87
POSITION  48- 2.4N, 139-20.3W    GMT  6:44     STATION 0510
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  12.00  32.45      0    24.64  331.3   0.00     0.00  1494.
   10  12.00  32.45     10    24.64  331.5   0.33     0.02  1494.
   20  12.00  32.45     20    24.63  332.0   0.66     0.07  1495.
   30  11.98  32.45     30    24.64  331.9   1.00     0.15  1495.
   50  11.27  32.49     50    24.80  316.5   1.65     0.42  1493.
   75   7.77  32.61     75    25.46  254.3   2.36     0.87  1480.
  100   7.03  32.71     99    25.64  237.5   2.98     1.42  1478.
  125   6.38  33.22    124    26.12  191.6   3.53     2.04  1476.
  150   6.23  33.71    149    26.53  153.7   3.95     2.63  1477.
  175   6.09  33.79    174    26.61  145.9   4.32     3.24  1477.
  200   5.85  33.82    199    26.66  141.3   4.68     3.93  1476.
  225   5.54  33.82    224    26.70  137.8   5.03     4.69  1475.
  250   5.27  33.83    248    26.74  133.9   5.36     5.51  1475.
  300   4.84  33.85    298    26.81  128.0   6.02     7.34  1474.
  400   4.30  33.92    397    26.92  117.8   7.25    11.72  1473.
  500   4.14  34.03    496    27.02  109.2   8.38    16.91  1474.
  600   3.86  34.11    595    27.12  100.5   9.43    22.76  1475.
  800   3.40  34.25    793    27.27   87.0  11.29    36.03  1476.
 1000   3.05  34.33    991    27.37   78.3  12.94    51.15  1478.
 1200   2.75  34.40   1188    27.45   71.0  14.44    67.86  1480.
 1500   2.39  34.47   1484    27.54   63.6  16.45    95.48  1484.

DEEPEST MEASUREMENT:

1504    2.38  34.47   1488    27.54   63.0  16.47    95.87  1484.
```



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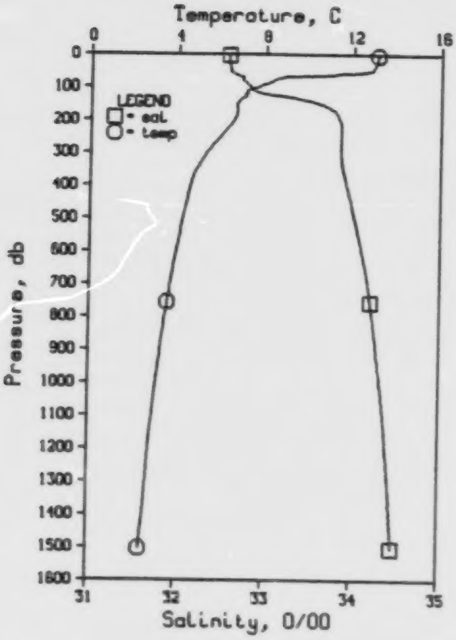
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 60          DATE  5/10/87
POSITION  48- 2.4N, 138-31.8W    GMT 20:13     STATION 0511
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  12.45  32.43      0    24.54  340.9   0.00     0.00  1496.
   10  12.45  32.43     10    24.54  341.1   0.34     0.02  1496.
   20  12.45  32.43     20    24.53  341.6   0.68     0.07  1496.
   30  12.45  32.43     30    24.53  341.8   1.02     0.16  1496.
   50  11.08  32.50     50    24.84  312.7   1.70     0.43  1492.
   75   7.91  32.71     75    25.52  248.7   2.37     0.85  1481.
  100   7.13  32.80     99    25.70  231.7   2.97     1.39  1478.
  125   7.02  33.18    124    26.01  202.5   3.52     2.02  1479.
  150   6.64  33.71    149    26.47  159.0   3.96     2.63  1478.
  175   6.49  33.80    174    26.56  150.6   4.34     3.27  1478.
  200   6.30  33.83    199    26.61  146.0   4.71     3.98  1478.
  225   6.01  33.84    224    26.66  141.9   5.07     4.76  1477.
  250   5.60  33.84    248    26.71  137.4   5.42     5.60  1476.
  300   5.18  33.87    298    26.78  130.7   6.09     7.48  1475.
  400   4.42  33.91    397    26.90  120.0   7.35    11.94  1474.
  500   4.11  34.02    496    27.02  109.5   8.49    17.20  1474.
  600   3.91  34.10    595    27.10  101.9   9.56    23.14  1475.
  800   3.40  34.24    793    27.26   87.9  11.45    36.58  1476.
 1000   3.03  34.34    991    27.38   77.6  13.10    51.71  1478.
 1200   2.76  34.41   1188    27.45   70.7  14.59    68.36  1480.
 1500   2.37  34.48   1484    27.55   62.3  16.58    95.77  1484.

DEEPEST MEASUREMENT:

1504    2.36  34.48   1488    27.55   62.1  16.61    96.15  1484.
```



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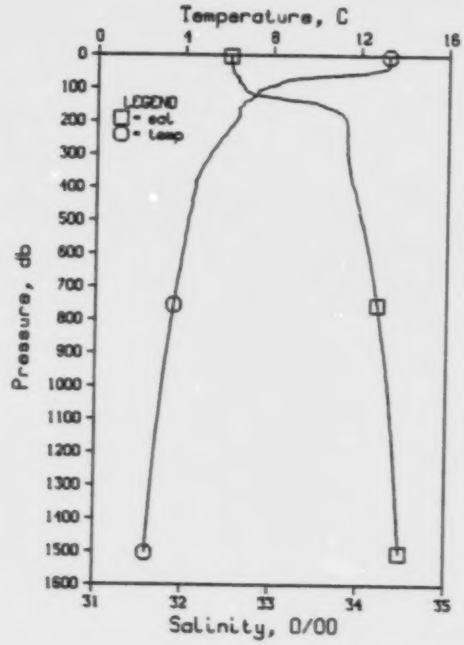
OCE'N PHYSICS DIVISION
REFERENCE NO. 87-02- 61          DATE  6/10/87
POSITION  47-30.0N, 138-32.0W     GMT  1: 0    STATION OS17
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0  13.08  32.57       0   24.52  342.4    0.00    0.00  1498.
   10  13.06  32.57      10   24.52  342.5    0.34    0.02  1498.
   20  13.05  32.57      20   24.53  342.3    0.68    0.07  1498.
   30  12.98  32.58      30   24.54  340.9    1.03    0.16  1498.
   50  12.76  32.59      50   24.60  336.4    1.70    0.43  1498.
   75   8.48  32.72      75   25.44  256.2    2.44    0.90  1483.
  100   7.57  32.81      99   25.64  237.1    3.06    1.45  1480.
  125   7.04  33.09     124   25.93  209.9    3.62    2.09  1479.
  150   6.63  33.60     149   26.39  167.0    4.09    2.74  1478.
  175   6.66  33.78     174   26.53  153.7    4.48    3.40  1479.
  200   6.52  33.84     199   26.59  148.1    4.86    4.12  1479.
  225   6.23  33.86     224   26.65  143.3    5.23    4.91  1478.
  250   5.92  33.86     248   26.68  139.8    5.58    5.77  1477.
  300   5.29  33.85     298   26.76  133.0    6.26    7.68  1476.
  400   4.57  33.92     397   26.89  120.8    7.53   12.19  1474.
  500   4.24  34.02     496   27.00  111.0    8.69   17.49  1475.
  600   3.96  34.10     595   27.10  102.5    9.75   23.46  1475.
  800   3.46  34.23     793   27.25   88.7   11.66   36.99  1477.
 1000   3.09  34.32     991   27.36   79.6   13.33   52.36  1478.
 1200   2.79  34.40    1188   27.45   71.5   14.83   69.16  1481.
 1500   2.41  34.48    1484   27.55   62.8   16.85   96.85  1484.

DEEPEST MEASUREMENT:

1505    2.40  34.48    1489   27.54   63.0   16.88   97.33  1484.
```



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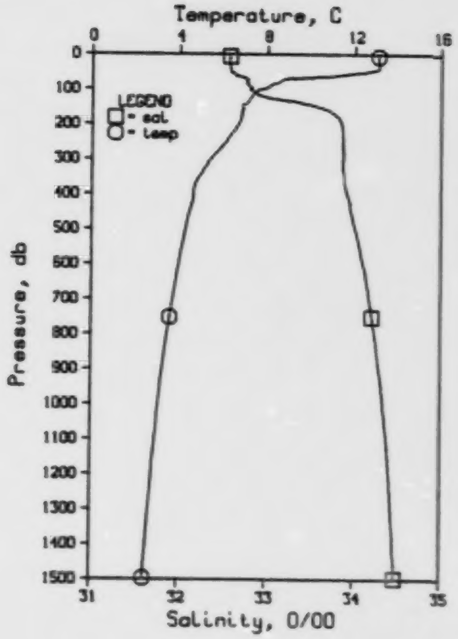
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 62          DATE  6/10/87
POSITION  46-57.3N, 138-32.3W     GMT  5: 2    STATION OS23
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0  13.27  32.51       0   24.44  350.3    0.00    0.00  1499.
   10  13.28  32.51      10   24.44  350.1    0.35    0.02  1499.
   20  13.28  32.51      20   24.44  350.8    0.70    0.07  1499.
   30  13.28  32.51      30   24.44  350.3    1.05    0.16  1499.
   50  12.37  32.53      50   24.63  333.3    1.74    0.44  1496.
   75   8.61  32.60      75   25.33  266.9    2.49    0.91  1483.
  100   7.60  32.66      99   25.52  248.6    3.13    1.49  1480.
  125   7.13  32.91     124   25.78  223.9    3.73    2.17  1479.
  150   6.65  33.54     149   26.34  171.6    4.22    2.85  1478.
  175   6.44  33.76     174   26.54  152.4    4.62    3.53  1478.
  200   6.32  33.84     199   26.62  145.8    4.99    4.23  1478.
  225   5.98  33.85     224   26.67  141.3    5.35    5.00  1477.
  250   5.67  33.84     248   26.70  137.9    5.70    5.85  1476.
  300   5.15  33.85     298   26.77  132.0    6.37    7.74  1475.
  400   4.51  33.93     397   26.90  119.8    7.63   12.21  1474.
  500   4.19  34.02     496   27.01  110.3    8.78   17.47  1475.
  600   3.95  34.11     595   27.11  101.8    9.84   23.40  1475.
  800   3.46  34.23     793   27.25   88.7   11.73   36.90  1477.
 1000   3.06  34.34     991   27.37   78.0   13.39   52.11  1478.
 1200   2.72  34.40    1188   27.46   70.4   14.88   68.72  1480.
 1500   2.36  34.49    1484   27.55   61.9   16.86   95.95  1484.

DEEPEST MEASUREMENT:

1504    2.35  34.49    1488   27.55   61.9   16.89   96.33  1484.
```



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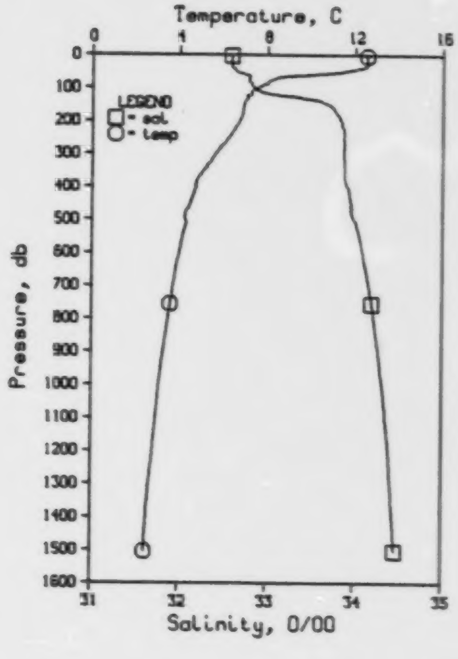
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 63          DATE  6/10/87
POSITION  46-57.7N, 139-21.7W    GMT  8:56      STATION 0S22
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL    DEPTH   SIGMA    SVA    DELTA     POT.   SOUND
                                 T               D        EN
    0  13.06  32.56       0   24.52   342.5    0.00     0.00   1498.
   10  13.06  32.56      10   24.52   343.0    0.34     0.02   1498.
   20  13.06  32.56      20   24.51   343.4    0.69     0.07   1498.
   30  13.07  32.56      30   24.51   343.8    1.03     0.16   1499.
   50  12.90  32.58      50   24.64   332.5    1.71     0.44   1497.
   75   8.60  32.75      75   25.44   255.6    2.44     0.90   1484.
  100   7.74  32.81      99   25.62   239.6    3.06     1.45   1481.
  125   7.20  32.99     124   25.83   219.2    3.64     2.11   1479.
  150   6.84  33.56     149   26.33   172.6    4.12     2.78   1479.
  175   6.79  33.78     174   26.51   156.0    4.53     3.46   1479.
  200   6.65  33.84     199   26.57   149.8    4.91     4.18   1479.
  225   6.36  33.85     224   26.62   145.4    5.28     4.98   1479.
  250   6.12  33.86     248   26.66   142.1    5.64     5.85   1478.
  300   5.40  33.86     298   26.75   133.8    6.33     7.79   1476.
  400   4.61  33.91     397   26.88   122.2    7.61    12.34   1474.
  500   4.28  34.00     496   26.99   112.5    8.78    17.72   1475.
  600   3.98  34.10     595   27.09   103.0    9.86    23.74   1475.
  800   3.45  34.23     793   27.25    88.8   11.77    37.32   1477.
 1000   3.08  34.33     991   27.37    78.3   13.43    52.56   1478.
 1200   2.79  34.41    1188   27.45    70.9   14.92    69.23   1481.
 1500   2.43  34.47    1484   27.54    63.4   16.93    96.79   1484.

DEEPEST MEASUREMENT:

 1496   2.43  34.47    1480   27.54    63.4   16.91    96.40   1484.
```



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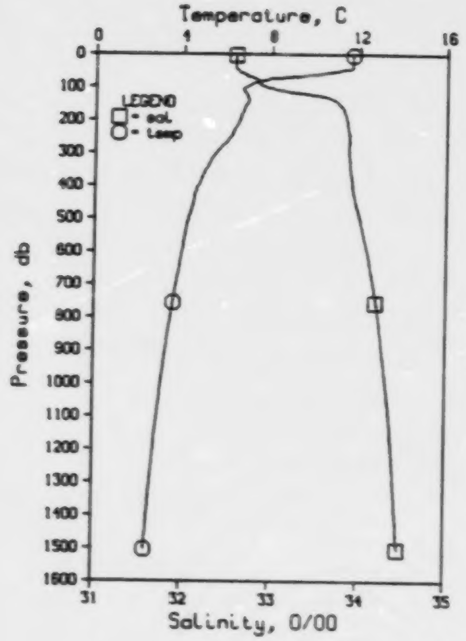
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 64          DATE  6/10/87
POSITION  46-57.6N, 140- 7.4W    GMT 12:42      STATION 0S21
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL    DEPTH   SIGMA    SVA    DELTA     POT.   SOUND
                                 T               D        EN
    0  12.52  32.58       0   24.64   330.9    0.00     0.00   1496.
   10  12.51  32.58      10   24.64   331.0    0.33     0.02   1496.
   20  12.51  32.58      20   24.64   331.3    0.66     0.07   1497.
   30  12.51  32.59      30   24.64   331.3    0.99     0.15   1497.
   50  11.48  32.64      50   24.88   309.3    1.64     0.42   1494.
   75   8.21  32.78      75   25.53   247.8    2.32     0.84   1482.
  100   7.55  32.85      99   25.67   234.1    2.92     1.38   1480.
  125   7.05  33.20     124   26.02   201.5    3.48     2.02   1479.
  150   6.92  33.68     149   26.41   164.5    3.93     2.64   1479.
  175   6.84  33.78     174   26.50   156.7    4.33     3.30   1480.
  200   6.70  33.83     199   26.56   150.9    4.71     4.04   1480.
  225   6.49  33.87     224   26.62   146.1    5.08     4.84   1479.
  250   6.26  33.87     248   26.65   143.4    5.44     5.72   1479.
  300   5.62  33.87     298   26.73   136.0    6.14     7.67   1477.
  400   4.73  33.92     397   26.87   123.0    7.44    12.29   1475.
  500   4.25  33.99     496   26.98   113.2    8.62    17.70   1475.
  600   3.98  34.09     595   27.09   103.5    9.70    23.75   1475.
  800   3.49  34.22     793   27.24    88.9   11.63    37.45   1477.
 1000   3.09  34.32     991   27.36    79.5   13.32    52.94   1478.
 1200   2.82  34.40    1188   27.44    72.1   14.83    69.91   1481.
 1500   2.43  34.47    1484   27.53    63.9   16.87    97.86   1484.

DEEPEST MEASUREMENT:

 1505   2.42  34.47    1489   27.54    63.7   16.90    98.35   1484.
```



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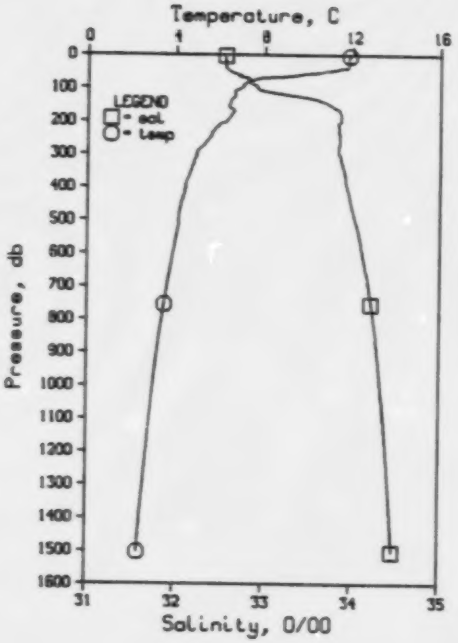
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 65          DATE  6/10/87
POSITION  46-57.5N, 140-54.8W   GMT 16:53     STATION OS20
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D       EN
    0  11.65  32.58       0   24.80  315.4    0.00    0.00  1493.
   10  11.65  32.58      10   24.80  315.9    0.32    0.02  1493.
   20  11.64  32.58      20   24.80  316.2    0.63    0.06  1494.
   30  11.64  32.58      30   24.80  316.5    0.95    0.15  1494.
   50  11.02  32.61      50   24.94  303.5    1.58    0.40  1492.
   75   7.84  32.80      75   25.60  241.1    2.26    0.84  1481.
  100   6.80  32.92      99   25.83  218.8    2.84    1.35  1477.
  125   6.83  33.49     124   26.28  177.1    3.34    1.92  1478.
  150   6.85  33.75     149   26.48  158.2    3.75    2.49  1479.
  175   6.67  33.83     174   26.56  151.3    4.13    3.13  1479.
  200   6.52  33.84     199   26.59  147.9    4.51    3.84  1479.
  225   6.31  33.86     224   26.64  144.1    4.87    4.63  1478.
  250   6.12  33.88     248   26.68  140.5    5.23    5.50  1478.
  300   5.48  33.88     298   26.75  133.8    5.91    7.42  1476.
  400   4.67  33.92     397   26.88  121.8    7.19   11.96  1475.
  500   4.26  34.01     496   27.00  111.6    8.36   17.33  1475.
  600   3.97  34.10     595   27.09  103.0    9.43   23.34  1475.
  800   3.47  34.22     793   27.25   89.4   11.35   36.97  1477.
 1000   3.07  34.32     991   27.36   79.2   13.03   52.38  1478.
 1200   2.75  34.39    1188   27.44   71.7   14.54   69.21  1480.
 1500   2.38  34.47    1484   27.54   63.3   16.56   96.96  1484.

DEEPEST MEASUREMENT:

1505    2.38  34.47    1489   27.54   63.1   16.59   97.45  1484.
```

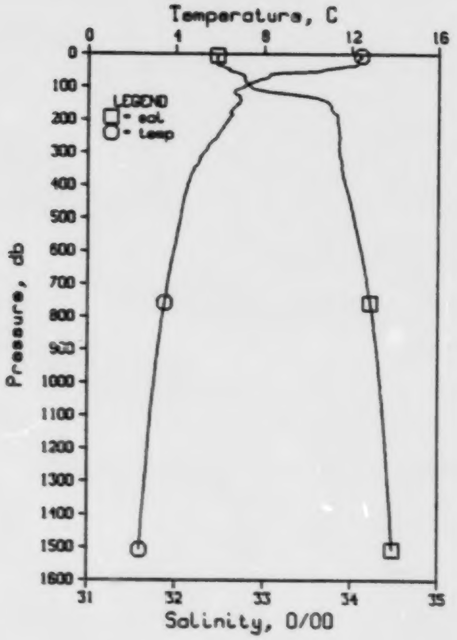


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 66          DATE  6/10/87
POSITION  47-30.0N, 140-55.5W   GMT 21: 8     STATION OS14
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D       EN
    0  11.83  32.55       0   24.74  321.3    0.00    0.00  1494.
   10  11.79  32.55      10   24.75  320.7    0.32    0.02  1494.
   20  11.77  32.55      20   24.75  320.7    0.64    0.07  1494.
   30  11.77  32.55      30   24.75  320.9    0.96    0.15  1494.
   50  10.70  32.60      50   24.99  298.9    1.59    0.40  1491.
   75   7.54  32.81      75   25.64  236.7    2.26    0.83  1480.
  100   6.93  32.90      99   25.80  221.9    2.83    1.33  1478.
  125   6.63  33.37     124   26.20  183.9    3.35    1.92  1477.
  150   6.37  33.72     149   26.52  154.1    3.76    2.50  1477.
  175   6.54  33.85     174   26.60  147.1    4.14    3.12  1479.
  200   6.27  33.86     199   26.64  143.3    4.50    3.82  1478.
  225   5.72  33.84     223   26.69  138.5    4.85    4.58  1476.
  250   5.51  33.85     248   26.72  135.7    5.20    5.41  1476.
  300   4.91  33.84     298   26.79  129.7    5.86    7.27  1474.
  400   4.43  33.93     397   26.91  118.5    7.09   11.66  1474.
  500   4.13  34.03     496   27.02  109.1    8.23   16.86  1474.
  600   3.88  34.12     595   27.12  100.5    9.27   22.72  1475.
  800   3.40  34.24     793   27.27   87.3   11.15   36.03  1476.
 1000   3.03  34.33     991   27.37   77.9   12.79   51.09  1478.
 1200   2.72  34.40    1188   27.45   70.6   14.28   67.72  1480.
 1500   2.35  34.48    1484   27.55   62.3   16.27   95.09  1484.

DEEPEST MEASUREMENT:

1505    2.35  34.48    1489   27.55   62.2   16.30   95.56  1484.
```

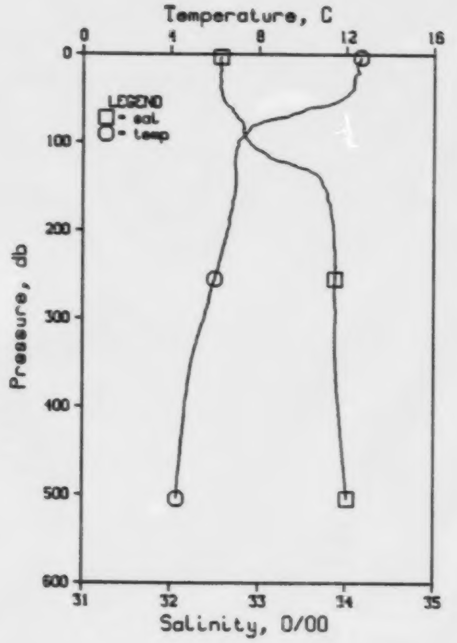


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 67          DATE  7/10/87
POSITION  47-30.9N, 140- 6.6W    GMT  1:26    STATION OS15
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0  12.42  32.46      0   24.56  338.2   0.00    0.00  1496.
   10  12.41  32.46     10   24.56  338.5   0.34    0.02  1496.
   20  12.26  32.46     20   24.59  336.1   0.67    0.07  1495.
   30  12.24  32.46     30   24.59  336.1   1.01    0.15  1496.
   50  10.55  32.61     50   25.01  296.3   1.65    0.41  1490.
   75   8.00  32.76     75   25.54  246.2   2.30    0.82  1481.
  100   7.07  32.84     99   25.73  228.6   2.89    1.35  1478.
  125   6.74  33.36    124   26.19  185.5   3.41    1.95  1478.
  150   6.86  33.74    149   26.47  159.3   3.84    2.54  1479.
  175   6.45  33.78    174   26.55  151.3   4.22    3.18  1478.
  200   6.37  33.84    199   26.61  146.3   4.59    3.89  1478.
  225   6.11  33.85    224   26.65  142.5   4.96    4.67  1478.
  250   5.86  33.86    248   26.69  138.8   5.31    5.52  1477.
  300   5.25  33.86    298   26.77  132.1   5.99    7.42  1475.
  400   4.52  33.93    397   26.90  119.5   7.24   11.90  1474.
  500   4.21  34.02    496   27.01  110.1   8.39   17.14  1475.
  600   3.91  34.11    595   27.11  101.2   9.44   23.05  1475.
  800   3.39  34.24    793   27.27   87.1  11.32   36.40  1476.
 1000   3.04  34.33    991   27.37   78.2  12.97   51.48  1478.
 1200   2.74  34.40   1188   27.45   71.0  14.45   68.15  1480.
 1500   2.39  34.47   1484   27.54   63.2  16.47   95.79  1484.

DEEPEST MEASUREMENT:

 1508   2.38  34.47   1492   27.54   63.1  16.52   96.56  1484.
```



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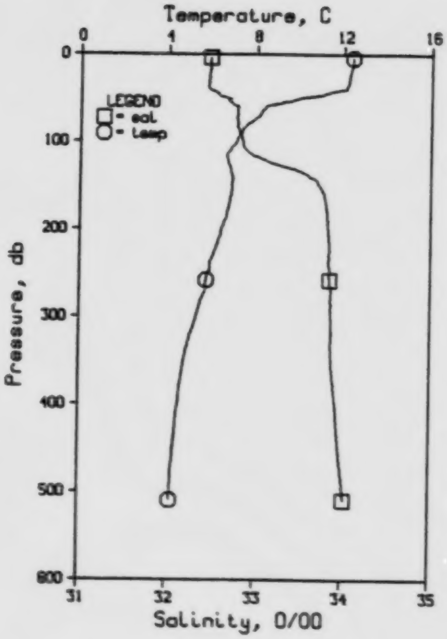
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 68          DATE  7/10/87
POSITION  47-30.2N, 139-43.3W    GMT  3:46    STATION OS31
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0  12.61  32.56      0   24.60  334.4   0.00    0.00  1497.
   10  12.49  32.56     10   24.63  332.4   0.33    0.02  1496.
   20  12.56  32.56     20   24.61  334.2   0.67    0.07  1497.
   30  12.33  32.56     30   24.66  329.9   1.00    0.15  1496.
   50  11.80  32.59     50   24.78  318.9   1.65    0.42  1495.
   75   8.37  32.78     75   25.50  250.0   2.37    0.87  1483.
  100   7.04  32.89     99   25.78  224.2   2.95    1.39  1478.
  125   6.89  33.37    124   26.17  187.1   3.48    1.99  1478.
  150   6.93  33.74    149   26.46  160.3   3.90    2.58  1480.
  175   6.77  33.82    174   26.54  152.6   4.29    3.23  1479.
  200   6.55  33.86    199   26.60  147.3   4.66    3.94  1479.
  225   6.32  33.87    224   26.64  143.7   5.03    4.73  1479.
  250   6.03  33.87    248   26.68  140.4   5.38    5.59  1478.
  300   5.53  33.87    298   26.74  134.6   6.07    7.52  1477.
  400   4.65  33.91    397   26.87  122.7   7.35   12.08  1475.
  500   4.29  34.01    496   26.99  112.3   8.53   17.46  1475.

DEEPEST MEASUREMENT:

  505   4.27  34.01    501   26.99  112.0   8.58   17.75  1475.
```

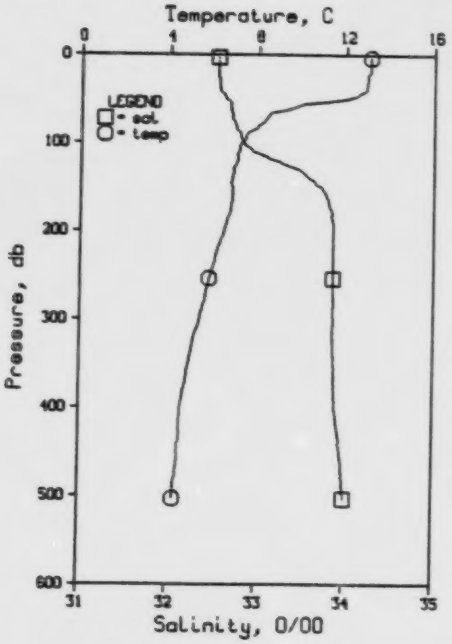


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 69          DATE  7/10/87
POSITION  47-46.2N, 139-20.0W    GMT   5:59    STATION 0534
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0  12.39  32.47       0   24.57  337.4   0.00    0.00  1496.
   10  12.36  32.46      10   24.57  337.7   0.34    0.02  1496.
   20  12.27  32.45      20   24.59  336.5   0.67    0.07  1496.
   30  12.20  32.45      30   24.59  336.0   1.01    0.15  1495.
   50   9.96  32.65      50   25.15  283.2   1.66    0.42  1488.
   75   7.85  32.78      75   25.57  243.2   2.29    0.82  1481.
  100   7.07  32.84      99   25.74  228.1   2.88    1.34  1478.
  125   6.73  33.20     124   26.06  197.4   3.42    1.96  1478.
  150   6.88  33.72     149   26.45  161.0   3.86    2.57  1479.
  175   6.74  33.81     174   26.54  153.2   4.25    3.22  1479.
  200   6.40  33.83     199   26.60  147.4   4.63    3.94  1478.
  225   6.11  33.84     224   26.65  142.9   4.99    4.72  1478.
  250   5.81  33.84     248   26.69  139.5   5.34    5.58  1477.
  300   5.29  33.86     298   26.76  132.4   6.02    7.48  1476.
  400   4.50  33.92     397   26.90  119.8   7.28   11.97  1474.
  500   4.19  34.02     496   27.01  110.0   8.43   17.23  1474.

DEEPEST MEASUREMENT:

  509   4.16  34.03     505   27.02  109.1   8.53   17.74  1475.
```



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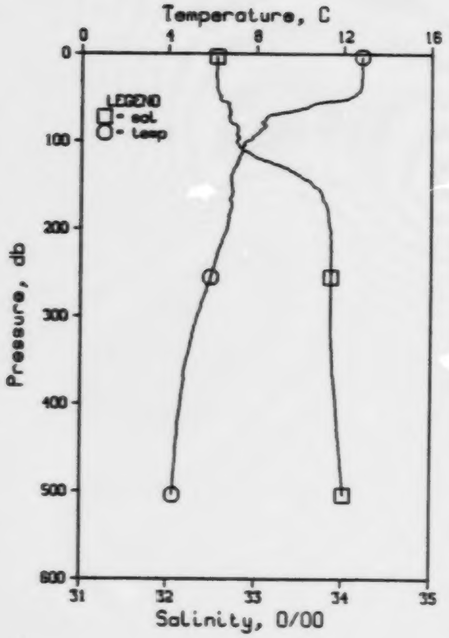
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 70          DATE  7/10/87
POSITION  47-30.0N, 138-56.1W    GMT   8:14    STATION 0533
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0  13.08  32.54       0   24.49  344.8   0.00    0.00  1498.
   10  13.08  32.54      10   24.49  345.1   0.34    0.02  1498.
   20  13.04  32.54      20   24.50  344.7   0.69    0.07  1498.
   30  12.93  32.55      30   24.53  342.0   1.03    0.16  1498.
   50  11.95  32.62      50   24.78  319.0   1.71    0.43  1495.
   75   8.28  32.72      75   25.46  253.7   2.39    0.86  1482.
  100   7.22  32.83      99   25.70  231.1   2.99    1.40  1479.
  125   6.95  33.32     124   26.13  191.3   3.53    2.01  1479.
  150   6.83  33.71     149   26.45  161.0   3.96    2.62  1479.
  175   6.77  33.83     174   26.55  152.0   4.35    3.27  1479.
  200   6.46  33.86     199   26.61  146.0   4.72    3.98  1479.
  225   6.12  33.86     224   26.66  142.2   5.08    4.76  1478.
  250   5.86  33.86     248   26.69  139.1   5.44    5.61  1477.
  300   5.38  33.86     298   26.75  133.7   6.12    7.52  1476.
  400   4.56  33.89     397   26.87  122.9   7.40   12.08  1474.
  500   4.28  34.01     496   26.99  112.2   8.57   17.46  1475.

DEEPEST MEASUREMENT:

  503   4.27  34.00     499   26.99  112.2   8.61   17.64  1475.
```



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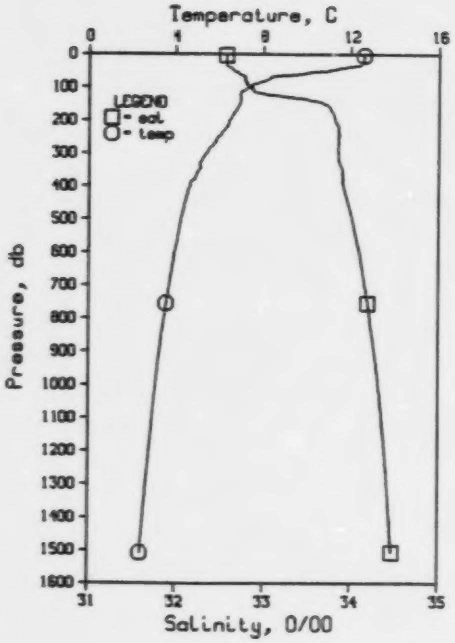
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 71          DATE  7/10/87
POSITION  47-13.8N, 139-20.0W   GMT 10:50    STATION OS32
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0  12.82  32.54      0   24.55  339.5   0.00    0.00  1497.
   10  12.82  32.54     10   24.55  340.0   0.34    0.02  1497.
   20  12.81  32.54     20   24.55  340.3   0.68    0.07  1497.
   30  12.78  32.54     30   24.56  339.7   1.02    0.16  1498.
   50  12.25  32.58     50   24.69  327.7   1.69    0.43  1496.
   75   8.39  32.69     75   25.43  257.3   2.41    0.88  1483.
  100   7.50  32.76     99   25.62  239.6   3.03    1.43  1480.
  125   7.12  33.18    124   26.00  203.7   3.59    2.08  1479.
  150   6.88  33.65    149   26.39  166.2   4.04    2.71  1479.
  175   6.86  33.81    174   26.52  154.4   4.44    3.37  1480.
  200   6.67  33.85    199   26.58  149.4   4.82    4.09  1479.
  225   6.27  33.86    224   26.64  143.7   5.19    4.89  1478.
  250   5.98  33.86    248   26.68  140.5   5.54    5.75  1478.
  300   5.34  33.85    298   26.75  133.7   6.23    7.67  1476.
  400   4.59  33.92    397   26.89  121.4   7.50   12.20  1474.
  500   4.25  34.01    496   26.99  111.9   8.67   17.54  1475.

DEEPEST MEASUREMENT:

  504   4.25  34.01    500   26.99  111.7   8.71   17.77  1475.
```

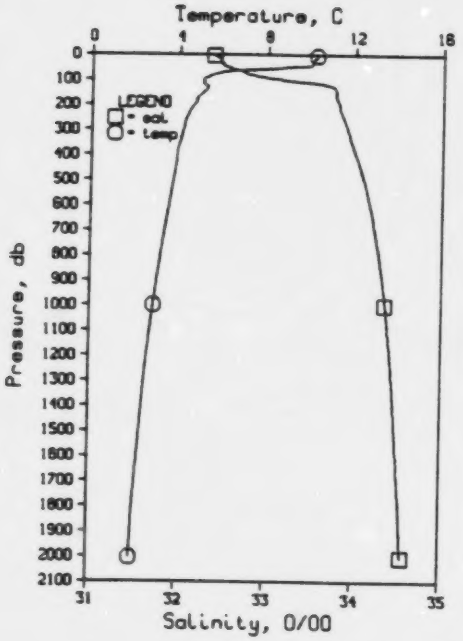


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 72          DATE  7/10/87
POSITION  47-30.0N, 139-20.0W   GMT 12:48    STATION OS16
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0  12.58  32.57      0   24.62  333.2   0.00    0.00  1496.
   10  12.58  32.57     10   24.62  333.4   0.33    0.02  1497.
   20  12.54  32.57     20   24.63  332.7   0.67    0.07  1497.
   30  12.47  32.57     30   24.64  331.9   1.00    0.15  1497.
   50  10.97  32.65     50   24.98  300.1   1.63    0.41  1492.
   75   8.21  32.78     75   25.53  247.9   2.30    0.83  1482.
  100   7.35  32.85     99   25.71  230.8   2.90    1.37  1479.
  125   6.93  33.11    124   25.96  206.8   3.46    2.01  1478.
  150   6.90  33.69    149   26.42  163.8   3.91    2.64  1479.
  175   6.68  33.78    174   26.53  154.0   4.31    3.29  1479.
  200   6.43  33.82    199   26.59  148.6   4.68    4.01  1479.
  225   6.24  33.85    224   26.64  143.8   5.05    4.81  1478.
  250   5.94  33.86    248   26.68  140.0   5.40    5.66  1477.
  300   5.40  33.85    298   26.74  134.4   6.09    7.59  1476.
  400   4.66  33.92    397   26.88  122.1   7.37   12.14  1475.
  500   4.24  34.02    496   27.00  110.9   8.53   17.47  1475.
  600   3.95  34.10    595   27.10  102.5   9.60   23.46  1475.
  800   3.47  34.22    793   27.24   89.8  11.52   37.12  1477.
 1000   3.10  34.32    991   27.36   79.6  13.21   52.59  1479.
 1200   2.80  34.39   1188   27.44   72.3  14.73   69.58  1481.
 1500   2.41  34.47   1484   27.54   63.5  16.76   97.42  1484.

DEEPEST MEASUREMENT:

 1507   2.40  34.47   1491   27.54   63.1  16.80   98.10  1484.
```



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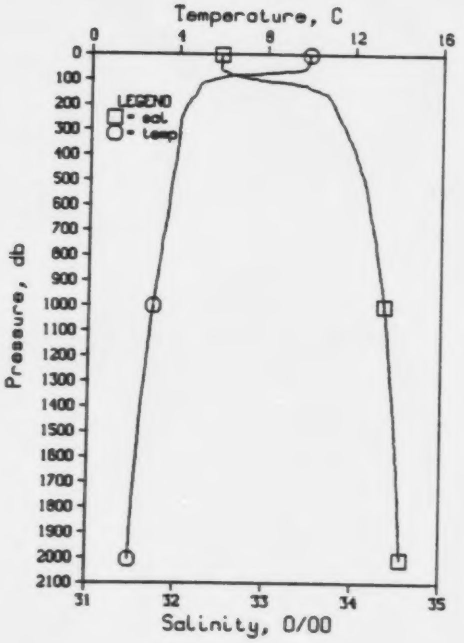
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 73          DATE  8/10/87
POSITION  49-59.3N, 145- 0.3W   GMT 15:58     STATION MP26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T               D       EN
    0  10.19  32.38       0   24.90  306.0    0.00     0.00  1488.
   10  10.19  32.42      10   24.94  302.9    0.31     0.02  1488.
   20  10.05  32.45      20   24.98  298.9    0.61     0.06  1488.
   30  10.00  32.47      30   25.00  297.3    0.90     0.14  1488.
   50   8.89  32.54      50   25.24  275.1    1.49     0.38  1484.
   75   5.67  32.74      75   25.83  218.1    2.10     0.76  1472.
  100   5.05  33.15      99   26.23  181.0    2.60     1.21  1470.
  125   5.21  33.71     124   26.65  141.1    3.00     1.66  1472.
  150   5.05  33.77     149   26.72  135.0    3.34     2.14  1472.
  175   4.80  33.78     174   26.76  131.4    3.67     2.69  1471.
  200   4.64  33.81     199   26.79  128.1    4.00     3.31  1471.
  225   4.45  33.82     223   26.83  125.2    4.31     4.00  1471.
  250   4.32  33.85     248   26.86  121.9    4.62     4.74  1471.
  300   4.17  33.91     298   26.92  116.5    5.22     6.41  1471.
  400   3.89  34.01     397   27.03  107.1    6.33    10.39  1472.
  500   3.74  34.10     496   27.12   99.2    7.37    15.11  1473.
  600   3.56  34.17     595   27.20   92.7    8.32    20.47  1474.
  800   3.19  34.28     793   27.32   82.0   10.06    32.86  1476.
 1000   2.88  34.36     990   27.41   74.3   11.62    47.14  1478.
 1200   2.62  34.42    1188   27.48   68.0   13.05    63.07  1480.
 1500   2.32  34.48    1484   27.56   61.5   14.98    89.68  1484.
 2000   1.93  34.57    1976   27.65   52.9   17.81   139.98  1490.

DEEPEST MEASUREMENT:

2004    1.93   34.57   1980   27.66   52.6  17.84  140.41  1490.
```



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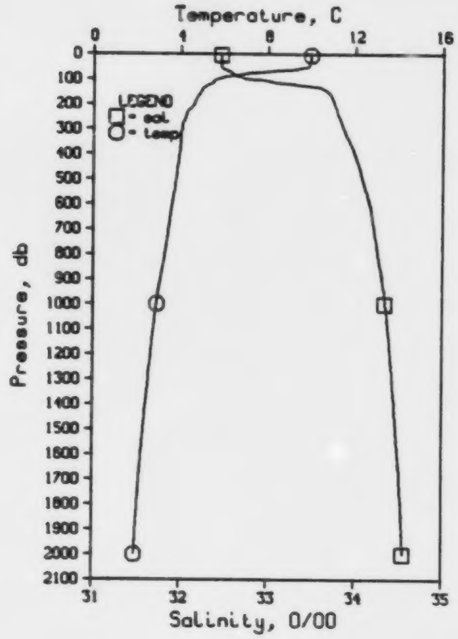
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 74          DATE  9/10/87
POSITION  50-54.1N, 143-34.5W   GMT  1:57     STATION MP33
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T               D       EN
    0   9.89  32.47       0   25.02  294.3    0.00     0.00  1487.
   10   9.88  32.47      10   25.03  294.4    0.29     0.02  1487.
   20   9.87  32.47      20   25.02  295.0    0.59     0.06  1487.
   30   9.82  32.47      30   25.03  293.9    0.88     0.14  1487.
   50   9.73  32.47      50   25.05  293.3    1.47     0.37  1487.
   75   8.05  32.54      75   25.36  263.2    2.18     0.83  1481.
  100   5.55  32.88      99   25.95  207.1    2.77     1.34  1472.
  125   4.91  33.44     124   26.47  158.1    3.22     1.87  1471.
  150   4.80  33.59     149   26.61  145.4    3.61     2.40  1471.
  175   4.59  33.70     174   26.71  135.7    3.95     2.98  1470.
  200   4.38  33.75     199   26.77  130.0    4.28     3.61  1470.
  225   4.23  33.78     223   26.81  126.3    4.60     4.30  1470.
  250   4.11  33.81     248   26.85  123.0    4.92     5.05  1470.
  300   4.01  33.89     298   26.93  116.0    5.51     6.72  1470.
  400   3.91  34.01     397   27.03  106.8    6.63    10.69  1472.
  500   3.71  34.11     496   27.13   98.5    7.65    15.39  1473.
  600   3.58  34.17     595   27.19   92.9    8.61    20.73  1474.
  800   3.25  34.27     793   27.30   83.4   10.37    33.26  1476.
 1000   2.92  34.35     990   27.40   75.1   11.95    47.75  1479.
 1200   2.65  34.41    1188   27.47   69.3   13.39    63.87  1480.
 1500   2.31  34.48    1483   27.55   61.6   15.35    90.73  1484.
 2000   1.93  34.56    1976   27.65   53.2   18.20   141.50  1490.

DEEPEST MEASUREMENT:

2008    1.93   34.56   1983   27.65   53.4  18.25  142.37  1491.
```



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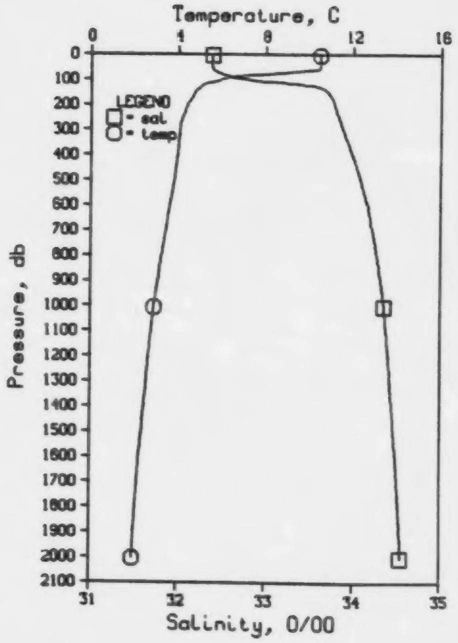
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 75          DATE  9/10/87
POSITION  50-55.5N, 143- 1.2W    GMT   5: 0     STATION MR20
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.   SOUND
                                T             D       EN
    0   9.92  32.46      0   25.01  296.0   0.00    0.00  1487.
   10   9.92  32.46     10   25.01  296.3   0.30    0.02  1487.
   20   9.92  32.46     20   25.00  296.6   0.59    0.06  1487.
   30   9.91  32.45     30   25.00  296.9   0.89    0.14  1487.
   50   9.81  32.45     50   25.02  295.6   1.48    0.38  1487.
   75   7.27  32.57     75   25.49  250.8   2.18    0.82  1478.
  100   5.67  32.74     99   25.83  218.5   2.76    1.34  1472.
  125   5.17  33.37    124   26.38  166.4   3.24    1.88  1472.
  150   4.90  33.67    149   26.66  140.6   3.61    2.40  1471.
  175   4.72  33.72    174   26.72  135.1   3.95    2.97  1471.
  200   4.61  33.75    199   26.75  132.4   4.29    3.61  1471.
  225   4.32  33.78    223   26.81  126.8   4.61    4.31  1470.
  250   4.20  33.81    248   26.84  124.0   4.93    5.07  1470.
  300   4.05  33.86    298   26.90  119.1   5.53    6.77  1470.
  400   3.93  33.99    397   27.01  108.9   6.67   10.81  1472.
  500   3.78  34.08    496   27.10  101.2   7.72   15.62  1473.
  600   3.60  34.16    595   27.18   94.2   8.69   21.08  1474.
  800   3.27  34.26    793   27.29   84.7  10.48   33.78  1476.
 1000   2.91  34.34    990   27.39   75.8  12.07   48.37  1478.
 1200   2.65  34.41   1188   27.47   69.3  13.52   64.53  1480.
 1500   2.33  34.48   1484   27.55   62.3  15.49   91.62  1484.
 2000   1.94  34.56   1976   27.65   53.7  18.36  142.72  1490.

DEEPEST MEASUREMENT:

2001    1.94  34.56   1977   27.65   53.7  18.37  142.82  1490.
```

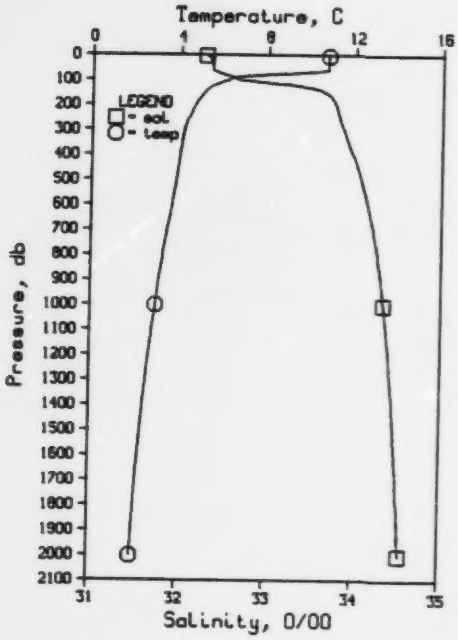


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 76          DATE  9/10/87
POSITION  50-58.0N, 142-20.0W    GMT   8:33     STATION MR19
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.   SOUND
                                T             D       EN
    0  10.48  32.38      0   24.85  310.7   0.00    0.00  1489.
   10  10.48  32.38     10   24.85  311.1   0.31    0.02  1489.
   20  10.48  32.38     20   24.85  311.0   0.62    0.06  1489.
   30  10.48  32.38     30   24.85  311.2   0.93    0.14  1489.
   50  10.46  32.38     50   24.85  311.5   1.56    0.40  1490.
   75   8.53  32.47     75   25.24  275.3   2.31    0.87  1483.
  100   5.93  32.78     99   25.84  218.3   2.92    1.42  1473.
  125   5.03  33.52    124   26.52  153.5   3.39    1.95  1471.
  150   4.74  33.70    149   26.70  137.1   3.75    2.45  1471.
  175   4.58  33.75    174   26.75  131.7   4.08    3.01  1470.
  200   4.37  33.78    199   26.80  127.2   4.41    3.63  1470.
  225   4.28  33.80    223   26.83  124.9   4.72    4.31  1470.
  250   4.16  33.83    248   26.86  121.7   5.03    5.06  1470.
  300   4.04  33.87    298   26.91  117.8   5.63    6.73  1470.
  400   3.94  33.98    397   27.01  109.5   6.76   10.77  1472.
  500   3.80  34.08    496   27.10  101.4   7.81   15.58  1473.
  600   3.59  34.17    595   27.19   93.6   8.79   21.05  1474.
  800   3.22  34.28    793   27.31   83.0  10.56   33.65  1476.
 1000   2.89  34.35    990   27.40   75.0  12.14   48.12  1478.
 1200   2.65  34.40   1188   27.46   69.5  13.59   64.33  1480.
 1500   2.36  34.47   1484   27.54   63.0  15.58   91.66  1484.
 2000   1.96  34.55   1976   27.64   54.4  18.49  143.36  1491.

DEEPEST MEASUREMENT:

2004    1.96  34.55   1979   27.64   54.4  18.51  143.80  1491.
```



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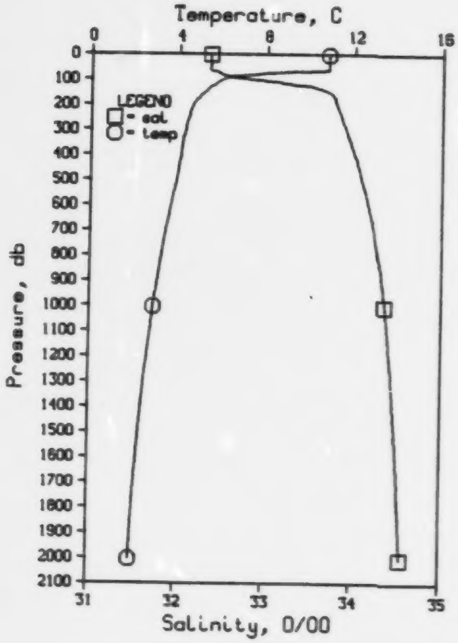
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 77             DATE  9/10/87
POSITION   51- 0.1N, 141-39.7W   GMT 12:30     STATION MR18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                 T              D        EN
    0  10.74   32.28       0   24.73  322.1    0.00     0.00  1490.
   10  10.74   32.31      10   24.75  320.3    0.32     0.02  1490.
   20  10.71   32.33      20   24.78  318.4    0.64     0.07  1490.
   30  10.71   32.35      30   24.79  317.0    0.96     0.15  1490.
   50  10.70   32.36      50   24.80  317.2    1.59     0.40  1490.
   75   8.63   32.45      75   25.20  278.7    2.36     0.89  1483.
  100   6.18   32.65      99   25.70  230.8    2.98     1.44  1474.
  125   5.39   33.37     124   26.36  168.8    3.48     2.01  1472.
  150   5.09   33.63     149   26.60  145.8    3.87     2.55  1472.
  175   4.84   33.72     174   26.71  136.3    4.22     3.13  1471.
  200   4.66   33.77     199   26.76  131.3    4.55     3.77  1471.
  225   4.51   33.79     223   26.79  128.3    4.88     4.47  1471.
  250   4.37   33.81     248   26.82  125.7    5.19     5.24  1471.
  300   4.16   33.87     298   26.89  119.5    5.81     6.96  1471.
  400   3.97   33.97     397   26.99  110.6    6.96    11.06  1472.
  500   3.83   34.07     496   27.09  102.4    8.02    15.92  1473.
  600   3.64   34.15     595   27.17   95.5    9.01    21.46  1474.
  800   3.25   34.27     793   27.30   83.9   10.80    34.16  1476.
 1000   2.95   34.34     990   27.39   76.4   12.40    48.82  1478.
 1200   2.66   34.40    1188   27.46   70.0   13.86    65.20  1480.
 1500   2.32   34.47    1484   27.55   62.3   15.84    92.36  1484.
 2000   1.93   34.56    1976   27.65   53.4   18.73   143.75  1490.

DEEPEST MEASUREMENT:

2002    1.93   34.56    1978   27.65   53.6   18.74   143.97  1490.
```



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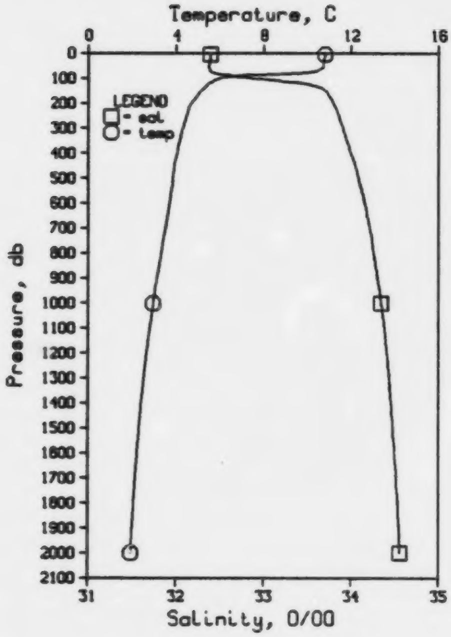
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 78             DATE  9/10/87
POSITION   51- 2.0N, 140-56.0W   GMT 17: 5     STATION MR17
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                 T              D        EN
    0  10.79   32.35       0   24.77  318.3    0.00     0.00  1490.
   10  10.80   32.35      10   24.77  318.5    0.32     0.02  1490.
   20  10.79   32.35      20   24.77  318.8    0.64     0.06  1490.
   30  10.79   32.35      30   24.77  319.0    0.96     0.15  1490.
   50  10.79   32.35      50   24.77  319.2    1.59     0.41  1491.
   75   8.00   32.46      75   25.30  269.0    2.36     0.89  1481.
  100   5.96   32.81      99   25.85  216.7    2.97     1.44  1474.
  125   5.50   33.42     124   26.39  166.0    3.45     1.98  1473.
  150   5.14   33.69     149   26.64  142.1    3.83     2.51  1472.
  175   4.86   33.77     174   26.74  133.2    4.17     3.07  1472.
  200   4.61   33.79     199   26.79  129.0    4.50     3.70  1471.
  225   4.50   33.82     223   26.82  126.2    4.82     4.39  1471.
  250   4.44   33.85     248   26.85  123.1    5.13     5.14  1471.
  300   4.29   33.91     298   26.91  118.0    5.73     6.83  1472.
  400   4.09   34.00     397   27.01  109.6    6.87    10.88  1472.
  500   3.90   34.09     496   27.09  102.0    7.92    15.70  1473.
  600   3.65   34.16     595   27.18   94.5    8.90    21.19  1474.
  800   3.25   34.27     793   27.31   83.3   10.67    33.75  1476.
 1000   2.90   34.36     990   27.40   74.7   12.24    48.19  1478.
 1200   2.64   34.41    1188   27.47   69.0   13.68    64.28  1480.
 1500   2.29   34.48    1484   27.56   61.2   15.63    91.00  1484.
 2000   1.93   34.56    1976   27.64   53.8   18.48   141.81  1490.

DEEPEST MEASUREMENT:

2005    1.93   34.56    1980   27.65   53.4   18.51   142.36  1490.
```



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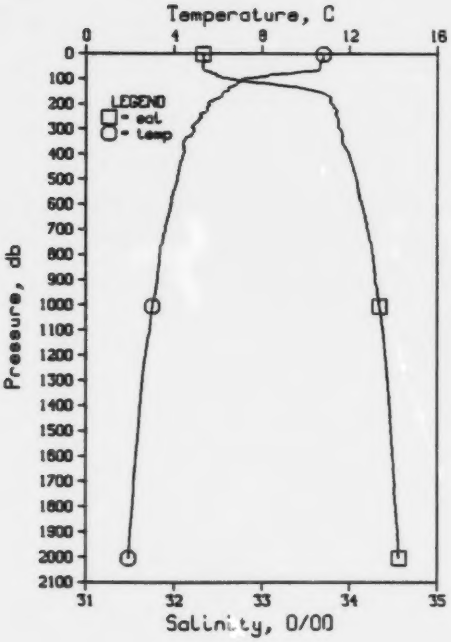
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 79          DATE 10/10/87
POSITION  51- 3.9N, 140-14.2W   GMT  5:44    STATION MR16
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH    SIGMA    SVA   DELTA     POT.   SOUND
                                  T               D        EN
    0  10.78   32.38       0    24.80  315.4    0.00     0.00   1490.
   10  10.78   32.38      10    24.80  315.7    0.32     0.02   1490.
   20  10.75   32.38      20    24.80  315.7    0.63     0.06   1490.
   30  10.72   32.38      30    24.81  315.5    0.95     0.14   1490.
   50  10.71   32.36      50    24.80  316.8    1.58     0.40   1490.
   75  10.15   32.40      75    24.92  305.7    2.36     0.90   1489.
  100   5.98   32.85      99    25.88  214.2    3.01     1.47   1474.
  125   5.41   33.50     124    26.46  158.9    3.47     1.99   1473.
  150   5.11   33.70     149    26.65  141.2    3.84     2.51   1472.
  175   4.88   33.75     174    26.72  134.6    4.18     3.08   1472.
  200   4.68   33.79     199    26.77  130.2    4.51     3.71   1471.
  225   4.53   33.83     223    26.82  125.8    4.83     4.40   1471.
  250   4.45   33.85     248    26.85  123.3    5.14     5.16   1471.
  300   4.28   33.90     298    26.91  118.1    5.75     6.85   1471.
  400   4.03   33.99     397    27.00  109.7    6.88    10.90   1472.
  500   3.83   34.08     496    27.10  101.5    7.94    15.72   1473.
  600   3.69   34.15     595    27.16   96.0    8.92    21.25   1474.
  800   3.31   34.25     793    27.28   85.6   10.73    34.08   1476.
 1000   2.95   34.34     990    27.39   76.4   12.34    48.82   1478.
 1200   2.65   34.41    1188    27.47   69.0   13.79    65.07   1480.
 1500   2.31   34.48    1484    27.55   61.7   15.75    91.98   1484.
 2000   1.94   34.55    1976    27.64   54.0   18.62   143.08   1490.

DEEPEST MEASUREMENT:

2001    1.94   34.55    1977    27.64   54.0   18.63   143.19   1490.
```



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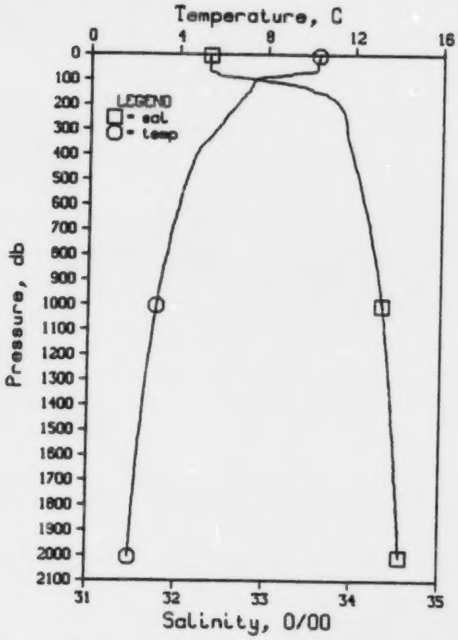
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 80          DATE 10/10/87
POSITION  51- 6.0N, 139-30.0W   GMT 10:21    STATION MR15
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH    SIGMA    SVA   DELTA     POT.   SOUND
                                  T               D        EN
    0  10.78   32.32       0    24.75  320.0    0.00     0.00   1490.
   10  10.78   32.33      10    24.76  319.9    0.32     0.02   1490.
   20  10.76   32.33      20    24.76  319.9    0.64     0.07   1490.
   30  10.67   32.33      30    24.78  318.1    0.96     0.15   1490.
   50  10.62   32.32      50    24.78  318.7    1.60     0.41   1490.
   75   9.49   32.40      75    25.03  295.0    2.38     0.90   1486.
  100   7.12   32.63      99    25.56  244.9    3.06     1.51   1478.
  125   6.78   33.16     124    26.02  201.0    3.62     2.15   1478.
  150   6.33   33.61     149    26.44  162.1    4.06     2.77   1477.
  175   6.02   33.78     174    26.61  145.8    4.45     3.40   1476.
  200   5.54   33.79     199    26.67  139.8    4.80     4.08   1475.
  225   5.49   33.85     223    26.73  135.0    5.15     4.83   1475.
  250   5.19   33.85     248    26.76  132.1    5.48     5.63   1474.
  300   4.89   33.89     298    26.83  125.8    6.12     7.43   1474.
  400   4.41   33.99     397    26.96  113.9    7.32    11.69   1474.
  500   4.14   34.08     496    27.06  105.3    8.41    16.69   1474.
  600   3.85   34.14     595    27.14   98.4    9.43    22.40   1475.
  800   3.33   34.27     793    27.29   84.8   11.25    35.37   1476.
 1000   3.02   34.33     990    27.37   77.7   12.89    50.32   1478.
 1200   2.69   34.40    1188    27.46   70.0   14.35    66.76   1480.
 1500   2.35   34.47    1484    27.54   63.3   16.33    93.92   1484.
 2000   1.92   34.56    1976    27.65   53.2   19.23   145.40   1490.

DEEPEST MEASUREMENT:

2005    1.92   34.56    1981    27.65   53.2   19.26   145.95   1490.
```

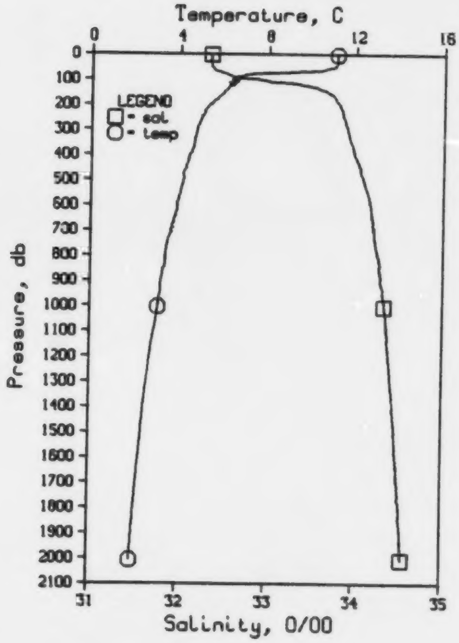


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 81              DATE 10/10/87
POSITION  51- 9.0N, 138-47.7W   GMT 13:54    STATION MR14
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0  10.30  32.34      0   24.85  310.8   0.00    0.00  1488.
   10  10.30  32.33     10   24.85  311.5   0.31    0.02  1488.
   20  10.29  32.33     20   24.85  311.4   0.62    0.06  1488.
   30  10.27  32.33     30   24.85  311.8   0.93    0.14  1488.
   50  10.22  32.33     50   24.86  311.0   1.56    0.40  1489.
   75   9.12  32.42     75   25.10  288.2   2.32    0.88  1485.
  100   7.43  32.88     99   25.71  230.1   2.99    1.47  1480.
  125   7.26  33.32    124   26.09  195.3   3.52    2.08  1480.
  150   7.09  33.56    149   26.29  176.1   3.98    2.72  1480.
  175   6.80  33.74    174   26.48  158.8   4.39    3.41  1479.
  200   6.56  33.81    199   26.56  151.1   4.78    4.15  1479.
  225   6.34  33.86    223   26.63  144.8   5.15    4.95  1479.
  250   6.11  33.88    248   26.68  140.7   5.50    5.81  1478.
  300   5.69  33.90    298   26.75  134.4   6.19    7.73  1477.
  400   4.75  33.98    397   26.91  118.8   7.46   12.24  1475.
  500   4.36  34.06    496   27.02  109.4   8.60   17.48  1475.
  600   4.05  34.11    595   27.10  102.5   9.66   23.40  1476.
  800   3.52  34.24    793   27.25   88.9  11.56   36.90  1477.
 1000   3.07  34.33    990   27.37   78.3  13.22   52.12  1478.
 1200   2.74  34.39   1188   27.45   71.5  14.73   68.97  1480.
 1500   2.38  34.46   1484   27.53   63.7  16.75   96.76  1484.
 2000   1.93  34.56   1976   27.65   53.4  19.66  148.42  1490.

DEEPEST MEASUREMENT:

2006    1.93  34.56   1982   27.65   53.3  19.69  149.08  1490.
```



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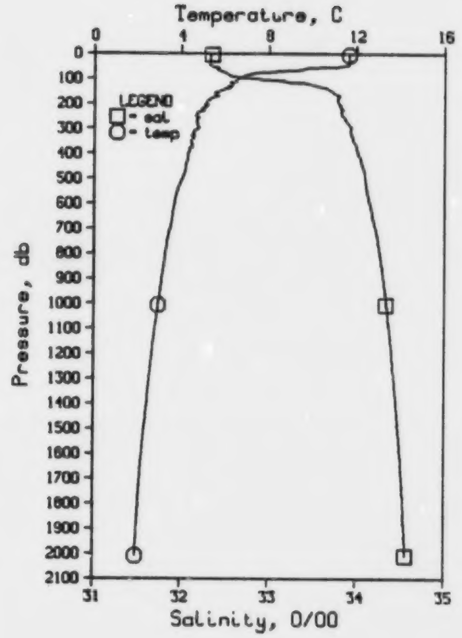
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 82              DATE 10/10/87
POSITION  51-11.0N, 138- 6.0W   GMT 17:39    STATION MR13
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0  11.11  32.34      0   24.71  323.9   0.00    0.00  1491.
   10  11.11  32.34     10   24.71  324.1   0.32    0.02  1491.
   20  11.11  32.34     20   24.71  324.6   0.65    0.07  1491.
   30  11.11  32.34     30   24.71  324.8   0.97    0.15  1491.
   50  11.02  32.34     50   24.73  323.6   1.62    0.41  1492.
   75   7.96  32.48     75   25.33  266.6   2.38    0.90  1481.
  100   6.29  32.86     99   25.85  216.8   2.99    1.44  1475.
  125   6.22  33.43    124   26.31  174.0   3.49    2.00  1476.
  150   5.97  33.66    149   26.52  153.9   3.89    2.57  1476.
  175   5.68  33.76    174   26.64  143.3   4.26    3.18  1475.
  200   5.33  33.81    199   26.72  135.8   4.61    3.85  1474.
  225   5.12  33.84    223   26.77  131.2   4.95    4.57  1474.
  250   4.98  33.86    248   26.79  128.8   5.27    5.36  1473.
  300   4.75  33.90    298   26.86  123.4   5.90    7.12  1473.
  400   4.43  33.99    397   26.96  114.4   7.09   11.37  1474.
  500   4.18  34.09    496   27.07  104.9   8.18   16.36  1475.
  600   3.92  34.17    595   27.16   96.7   9.19   21.98  1475.
  800   3.39  34.26    793   27.28   86.1  11.02   35.01  1476.
 1000   3.08  34.33    990   27.37   78.4  12.66   50.04  1478.
 1200   2.74  34.39   1188   27.45   71.5  14.16   66.78  1480.
 1500   2.38  34.47   1484   27.54   62.9  16.17   94.37  1484.
 2000   1.93  34.56   1976   27.65   53.7  19.07  145.93  1490.

DEEPEST MEASUREMENT:

2006    1.93  34.56   1981   27.65   53.4  19.10  146.58  1490.
```



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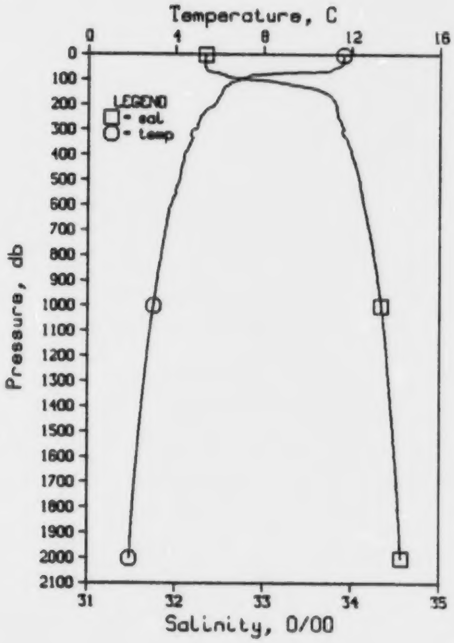
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 83          DATE 11/10/87
POSITION  51-13.0N, 137-23.0W    GMT  0:37    STATION MR12
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                 T              D        EN
    0  11.64   32.34       0   24.62  333.1    0.00     0.00  1493.
   10  11.65   32.32      10   24.60  334.8    0.33     0.02  1493.
   20  11.65   32.32      20   24.60  335.2    0.67     0.07  1493.
   30  11.65   32.32      30   24.60  335.5    1.00     0.15  1493.
   50  11.32   32.33      50   24.67  329.2    1.67     0.43  1493.
   75   7.76   32.49      75   25.36  263.3    2.41     0.89  1480.
  100   6.54   32.83      99   25.80  222.0    3.03     1.44  1476.
  125   6.27   33.48     124   26.34  170.9    3.52     2.00  1476.
  150   5.73   33.71     149   26.59  147.5    3.91     2.55  1475.
  175   5.45   33.79     174   26.69  138.5    4.27     3.14  1474.
  200   5.07   33.79     199   26.73  134.5    4.61     3.79  1473.
  225   4.99   33.84     223   26.78  129.9    4.94     4.51  1473.
  250   4.63   33.83     248   26.81  126.9    5.26     5.28  1472.
  300   4.74   33.94     298   26.88  120.6    5.88     7.01  1473.
  400   4.27   34.01     397   26.99  111.1    7.04    11.14  1473.
  500   4.05   34.10     496   27.09  103.0    8.11    16.03  1474.
  600   3.70   34.15     595   27.16   96.0    9.10    21.60  1474.
  800   3.27   34.26     793   27.30   84.3   10.90    34.38  1476.
 1000   2.96   34.34     990   27.39   76.5   12.50    49.11  1478.
 1200   2.67   34.40    1188   27.46   70.0   13.97    65.51  1480.
 1500   2.32   34.48    1484   27.55   62.0   15.95    92.69  1484.
 2000   1.93   34.56    1976   27.65   53.2   18.80   143.43  1490.

DEEPEST MEASUREMENT:

2010    1.92   34.56    1985   27.65   53.1   18.86   144.51  1491.
```

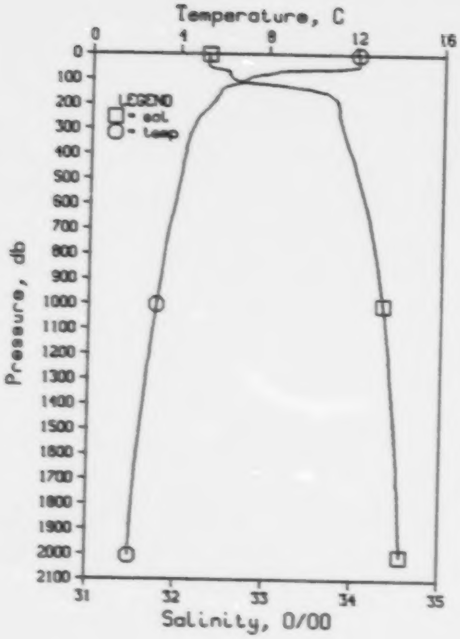


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 84          DATE 11/10/87
POSITION  51-15.0N, 136-40.3W    GMT  5:16    STATION MR11
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                 T              D        EN
    0  11.60   32.33       0   24.62  333.1    0.00     0.00  1493.
   10  11.60   32.33      10   24.61  333.6    0.33     0.02  1493.
   20  11.60   32.33      20   24.61  334.0    0.67     0.07  1493.
   30  11.61   32.32      30   24.61  334.6    1.00     0.15  1493.
   50  11.38   32.33      50   24.65  330.7    1.67     0.42  1493.
   75   8.72   32.46      75   25.20  278.8    2.46     0.93  1484.
  100   6.91   32.85      99   25.76  225.9    3.09     1.49  1477.
  125   6.30   33.38     124   26.26  178.4    3.58     2.05  1476.
  150   6.09   33.67     149   26.52  154.5    3.99     2.62  1476.
  175   5.93   33.78     174   26.62  145.0    4.37     3.24  1476.
  200   5.73   33.83     199   26.68  139.3    4.72     3.92  1476.
  225   5.36   33.83     223   26.73  134.9    5.06     4.66  1475.
  250   5.09   33.84     248   26.77  131.2    5.40     5.47  1474.
  300   4.80   33.89     298   26.84  124.5    6.04     7.26  1474.
  400   4.39   34.00     397   26.98  112.7    7.23    11.49  1474.
  500   4.18   34.08     496   27.06  105.3    8.31    16.47  1475.
  600   3.79   34.14     595   27.15   97.6    9.33    22.15  1475.
  800   3.35   34.25     793   27.28   86.1   11.15    35.13  1476.
 1000   3.00   34.34     990   27.38   77.1   12.78    50.02  1478.
 1200   2.70   34.40    1188   27.46   70.3   14.25    66.50  1480.
 1500   2.34   34.47    1484   27.54   62.6   16.25    93.90  1484.
 2000   1.92   34.57    1976   27.65   53.0   19.11   144.79  1490.

DEEPEST MEASUREMENT:

2002    1.92   34.57    1978   27.65   52.9   19.12   145.01  1490.
```

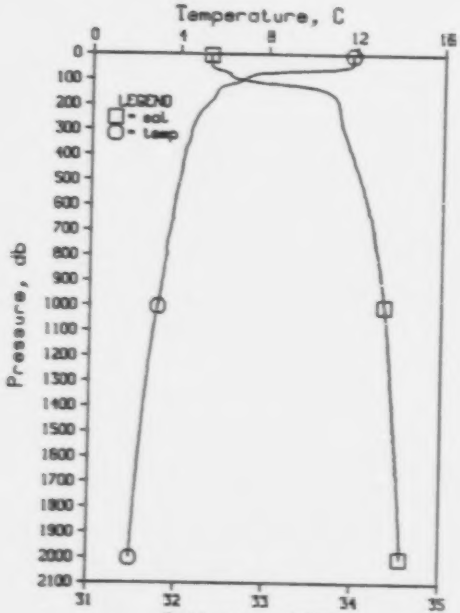


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 85          DATE 11/10/87
POSITION  51-17.0N, 135-57.6W    GMT  9:10     STATION MR10
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0  12.07  32.32       0   24.52  342.1   0.00    0.00  1494.
   10  12.07  32.31      10   24.52  342.9   0.34    0.02  1494.
   20  12.07  32.31      20   24.52  343.1   0.69    0.07  1495.
   30  12.07  32.31      30   24.51  343.7   1.03    0.16  1495.
   50  11.97  32.32      50   24.54  341.5   1.72    0.44  1495.
   75   8.24  32.54      75   25.33  266.4   2.47    0.91  1482.
  100   7.03  32.59      99   25.54  246.6   3.10    1.48  1478.
  125   6.30  33.09     124   26.03  200.5   3.68    2.13  1476.
  150   5.82  33.59     149   26.48  157.4   4.12    2.75  1475.
  175   5.66  33.74     174   26.63  144.3   4.49    3.36  1475.
  200   5.43  33.79     199   26.69  138.5   4.84    4.04  1474.
  225   5.17  33.80     223   26.73  134.8   5.18    4.78  1474.
  250   4.87  33.80     248   26.76  131.6   5.52    5.58  1473.
  300   4.58  33.85     298   26.83  125.6   6.16    7.39  1473.
  400   4.28  33.95     397   26.94  115.6   7.37   11.68  1473.
  500   4.07  34.03     496   27.03  108.0   8.48   16.79  1474.
  600   3.86  34.12     595   27.12  100.2   9.52   22.60  1475.
  800   3.39  34.24     793   27.27   87.2  11.38   35.82  1476.
 1000   3.06  34.33     990   27.37   78.6  13.04   50.98  1478.
 1200   2.77  34.40    1188   27.45   71.1  14.53   67.69  1481.
 1500   2.35  34.48    1484   27.55   62.3  16.53   95.21  1484.
 2000   1.92  34.57    1976   27.65   53.0  19.39  145.97  1490.

DEEPEST MEASUREMENT:

2006    1.92   34.56   1981   27.65   53.1  19.42  146.62  1490.
```

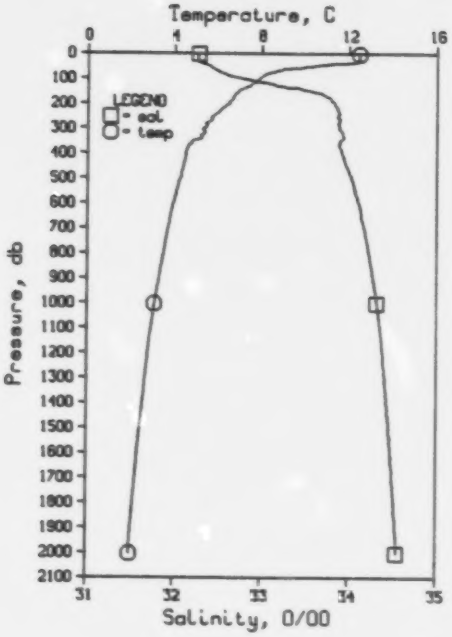


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 86          DATE 11/10/87
POSITION  52- 0.0N, 136- 0.0W    GMT 14:46     STATION MR[illegible]
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0  11.79  32.35       0   24.59  335.4   0.00    0.00  1493.
   10  11.79  32.34      10   24.59  336.0   0.34    0.02  1494.
   20  11.78  32.34      20   24.59  336.3   0.67    0.07  1494.
   30  11.79  32.34      30   24.59  336.3   1.01    0.15  1494.
   50  11.65  32.35      50   24.62  334.0   1.68    0.43  1494.
   75   7.88  32.52      75   25.37  262.6   2.44    0.91  1480.
  100   6.82  32.67      99   25.63  238.2   3.06    1.46  1477.
  125   6.05  33.31     124   26.24  180.5   3.60    2.07  1475.
  150   5.67  33.67     149   26.56  150.0   4.00    2.64  1474.
  175   5.51  33.77     174   26.66  140.7   4.36    3.24  1474.
  200   5.25  33.79     199   26.71  136.2   4.71    3.90  1474.
  225   4.97  33.81     223   26.76  132.2   5.04    4.62  1473.
  250   4.80  33.82     248   26.79  129.4   5.37    5.41  1473.
  300   4.55  33.85     298   26.84  124.7   6.01    7.19  1473.
  400   4.26  33.96     397   26.96  114.2   7.20   11.45  1473.
  500   4.04  34.05     496   27.05  106.3   8.30   16.48  1474.
  600   3.81  34.14     595   27.14   97.9   9.31   22.16  1475.
  800   3.49  34.27     793   27.28   86.3  11.15   35.20  1477.
 1000   3.10  34.35     990   27.38   77.6  12.79   50.19  1479.
 1200   2.74  34.41    1188   27.46   70.3  14.26   66.71  1480.
 1500   2.37  34.47    1483   27.54   63.3  16.26   94.20  1484.
 2000   1.93  34.56    1975   27.65   53.7  19.15  145.43  1490.

DEEPEST MEASUREMENT:

2002    1.93   34.56   1977   27.64   53.8  19.16  145.64  1490.
```

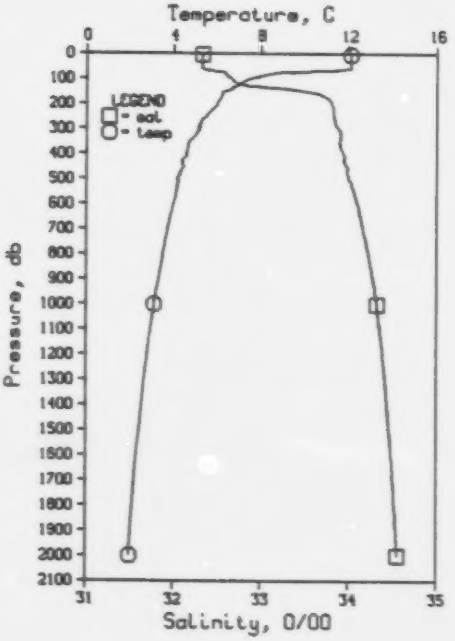


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 87          DATE 12/10/87
POSITION  51-19.0N, 135-15.0W    GMT  5:30    STATION MR09
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                 T               D       EN
    0  12.43  32.27       0   24.41  352.4    0.00     0.00  1496.
   10  12.43  32.26      10   24.41  353.5    0.35     0.02  1496.
   20  12.43  32.26      20   24.41  353.3    0.71     0.07  1496.
   30  12.42  32.26      30   24.41  353.5    1.06     0.16  1496.
   50  10.51  32.39      50   24.86  311.4    1.73     0.43  1490.
   75   8.45  32.51      75   25.28  271.1    2.44     0.89  1483.
  100   7.89  32.75      99   25.55  245.8    3.09     1.46  1481.
  125   7.51  33.13     124   25.90  212.8    3.66     2.12  1481.
  150   6.90  33.53     149   26.30  175.0    4.15     2.80  1479.
  175   6.66  33.76     174   26.51  155.9    4.56     3.47  1479.
  200   6.51  33.83     199   26.58  148.9    4.94     4.20  1479.
  225   6.11  33.87     223   26.67  141.2    5.30     4.99  1478.
  250   5.78  33.87     248   26.71  137.3    5.65     5.83  1477.
  300   5.33  33.88     298   26.77  131.8    6.32     7.71  1476.
  400   4.50  33.91     397   26.89  120.7    7.58    12.19  1474.
  500   4.26  34.03     496   27.01  110.5    8.74    17.50  1475.
  600   3.95  34.10     595   27.10  102.5    9.80    23.45  1475.
  800   3.50  34.22     793   27.24   90.0   11.71    37.04  1477.
 1000   3.09  34.32     990   27.36   79.6   13.41    52.54  1478.
 1200   2.79  34.38    1188   27.44   72.6   14.93    69.59  1481.
 1500   2.43  34.46    1484   27.52   64.8   17.00    97.96  1484.
 2000   1.97  34.55    1976   27.64   54.6   19.97   150.75  1491.

DEEPEST MEASUREMENT:

2004    1.97  34.55    1980   27.64   54.6   19.99   151.20  1491.
```



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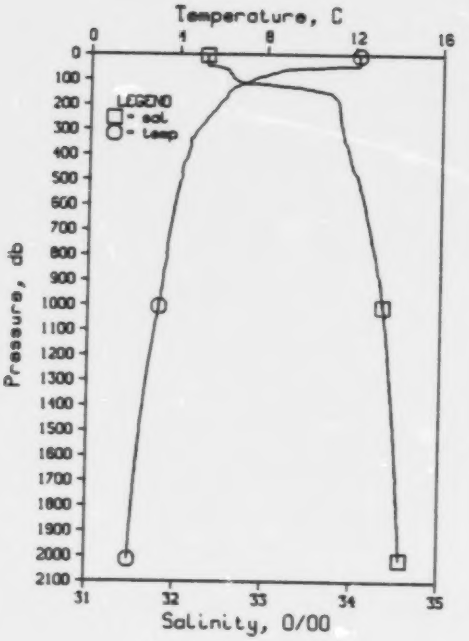
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 88          DATE 12/10/87
POSITION  51-21.2N, 134-32.7W    GMT  9:18    STATION MR08
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                 T               D       EN
    0  12.07  32.33       0   24.53  341.9    0.00     0.00  1494.
   10  12.07  32.32      10   24.52  342.5    0.34     0.02  1494.
   20  12.07  32.32      20   24.52  342.6    0.68     0.07  1495.
   30  12.07  32.32      30   24.52  343.3    1.03     0.16  1495.
   50  12.07  32.32      50   24.52  343.4    1.71     0.44  1495.
   75   9.10  32.54      75   25.20  278.8    2.53     0.96  1485.
  100   7.54  32.65      99   25.52  248.6    3.18     1.53  1480.
  125   6.96  32.78     124   25.70  231.8    3.79     2.22  1478.
  150   6.39  33.46     143   26.31  174.2    4.29     2.93  1477.
  175   6.17  33.73     174   26.55  151.5    4.69     3.59  1477.
  200   5.98  33.80     199   26.63  144.4    5.06     4.29  1477.
  225   5.73  33.82     223   26.67  140.2    5.41     5.06  1476.
  250   5.50  33.82     248   26.71  137.4    5.76     5.90  1476.
  300   5.10  33.87     298   26.79  129.6    6.43     7.77  1475.
  400   4.57  33.93     397   26.90  119.9    7.67    12.20  1474.
  500   4.17  33.99     496   26.99  111.9    8.83    17.51  1474.
  600   3.99  34.09     595   27.09  103.4    9.91    23.53  1475.
  800   3.51  34.22     793   27.24   90.0   11.83    37.22  1477.
 1000   3.10  34.32     990   27.36   79.7   13.53    52.73  1479.
 1200   2.80  34.39    1188   27.44   72.5   15.05    69.77  1481.
 1500   2.42  34.45    1484   27.52   64.9   17.10    97.90  1484.
 2000   1.37  34.56    1976   27.64   54.3   20.04   150.15  1491.

DEEPEST MEASUREMENT:

2001    1.97  34.56    1977   27.64   54.3   20.04   150.26  1491.
```



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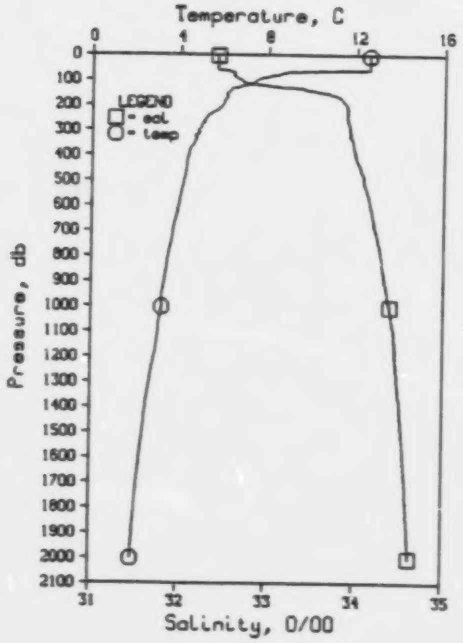
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 89          DATE 12/10/87
POSITION  51-23.5N, 133-49.6W    GMT 12:53     STATION MR07
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  12.15  32.31       0   24.50  344.7    0.00     0.00  1495.
   10  12.15  32.31      10   24.50  344.8    0.34     0.02  1495.
   20  12.15  32.31      20   24.50  345.1    0.69     0.07  1495.
   30  12.15  32.31      30   24.50  345.2    1.03     0.16  1495.
   50  10.68  32.42      50   24.85  312.3    1.72     0.44  1490.
   75   8.24  32.57      75   25.35  264.2    2.42     0.88  1482.
  100   7.35  32.63      99   25.53  247.7    3.05     1.45  1479.
  125   6.67  33.10     124   25.99  204.0    3.63     2.11  1477.
  150   6.23  33.64     149   26.47  158.7    4.08     2.73  1477.
  175   6.08  33.78     174   26.60  146.8    4.46     3.35  1477.
  200   5.80  33.81     199   26.66  141.2    4.81     4.04  1476.
  225   5.59  33.82     223   26.69  138.6    5.16     4.80  1475.
  250   5.33  33.82     248   26.73  135.5    5.51     5.62  1475.
  300   4.88  33.85     298   26.80  128.3    6.17     7.47  1474.
  400   4.43  33.94     397   26.92  118.1    7.39    11.84  1474.
  500   4.14  34.04     496   27.03  107.8    8.52    17.02  1474.
  600   3.86  34.12     595   27.12   99.8    9.56    22.83  1475.
  800   3.53  34.24     793   27.25   88.9   11.45    36.25  1477.
 1000   3.17  34.33     990   27.36   79.6   13.13    51.61  1479.
 1200   2.81  34.40    1188   27.45   71.6   14.64    68.51  1481.
 1500   2.38  34.47    1484   27.54   62.9   16.65    96.19  1484.
 2000   1.94  34.56    1976   27.65   53.3   19.54   147.53  1490.

DEEPEST MEASUREMENT:

2014    1.93  34.57    1989   27.65   53.0   19.62   149.05  1491.
```



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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 90          DATE 12/10/87
POSITION  51-25.5N, 133- 6.6W    GMT 16:34     STATION MR06
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  12.55  32.42       0   24.51  343.4    0.00     0.00  1496.
   10  12.56  32.42      10   24.50  344.4    0.34     0.02  1496.
   20  12.56  32.42      20   24.50  344.3    0.69     0.07  1496.
   30  12.56  32.42      30   24.50  344.6    1.03     0.16  1497.
   50  12.54  32.41      50   24.50  345.3    1.72     0.44  1497.
   75   8.55  32.61      75   25.34  265.6    2.50     0.93  1483.
  100   7.45  32.69      99   25.56  244.5    3.14     1.50  1479.
  125   6.76  33.02     124   25.92  210.9    3.72     2.17  1478.
  150   6.17  33.58     149   26.43  162.7    4.17     2.80  1476.
  175   6.05  33.82     174   26.64  143.2    4.55     3.42  1477.
  200   5.91  33.88     199   26.70  137.4    4.90     4.09  1477.
  225   5.55  33.89     223   26.75  132.8    5.24     4.82  1475.
  250   5.18  33.89     248   26.79  128.9    5.56     5.61  1474.
  300   4.81  33.92     298   26.86  122.9    6.19     7.36  1474.
  400   4.37  33.99     397   26.97  113.6    7.37    11.58  1474.
  500   4.18  34.08     496   27.06  105.3    8.47    16.58  1475.
  600   3.95  34.15     595   27.14   98.6    9.48    22.27  1475.
  800   3.49  34.28     793   27.28   85.8   11.32    35.32  1477.
 1000   3.23  34.38     990   27.40   76.2   12.93    50.12  1479.
 1200   2.90  34.46    1188   27.48   68.5   14.38    66.25  1481.
 1500   2.40  34.53    1484   27.59   58.7   16.28    92.33  1484.
 2000   1.91  34.63    1976   27.70   48.3   18.92   139.24  1490.

DEEPEST MEASUREMENT:

2002    1.91  34.63    1977   27.71   48.1   18.93   139.44  1490.
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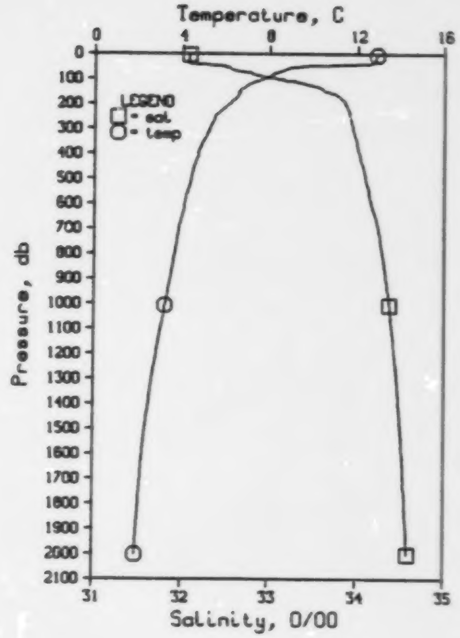

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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 91        DATE 12/10/87
POSITION  51-27.5N, 132-24.0W   GMT 20:44    STATION MJ05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                 T              D      EN
    0  12.88   32.07       0   24.17  375.6    0.00    0.00  1497.
   10  12.84   32.06      10   24.17  375.5    0.38    0.02  1497.
   20  12.78   32.06      20   24.18  374.8    0.75    0.08  1497.
   30  12.75   32.06      30   24.19  374.7    1.13    0.17  1497.
   50   9.38   32.47      50   25.10  287.6    1.82    0.45  1486.
   75   8.20   32.77      75   25.52  248.4    2.50    0.88  1482.
  100   7.67   33.08      99   25.84  218.6    3.09    1.41  1481.
  125   6.98   33.43     124   26.21  183.3    3.59    1.98  1479.
  150   6.61   33.62     149   26.40  165.2    4.02    2.58  1478.
  175   6.44   33.79     174   26.56  150.4    4.41    3.23  1478.
  200   6.14   33.85     199   26.65  142.3    4.77    3.92  1477.
  225   5.79   33.88     223   26.72  136.0    5.12    4.67  1476.
  250   5.48   33.90     248   26.77  131.2    5.45    5.48  1476.
  300   5.23   33.94     298   26.83  126.0    6.10    7.28  1475.
  400   4.70   34.02     397   26.95  115.1    7.30   11.55  1475.
  500   4.39   34.09     496   27.04  107.2    8.41   16.63  1475.
  600   4.10   34.16     595   27.13   99.7    9.44   22.41  1476.
  800   3.64   34.28     793   27.28   86.9   11.29   35.56  1477.
 1000   3.23   34.37     990   27.38   77.6   12.93   50.60  1479.
 1200   2.83   34.42    1188   27.46   70.3   14.40   67.06  1481.
 1500   2.33   34.50    1484   27.57   60.3   16.35   93.72  1484.
 2000   1.90   34.59    1976   27.67   51.2   19.12  143.02  1490.

DEEPEST MEASUREMENT:

2003    1.88   34.59    1978   27.67   51.0   19.13  143.33  1490.
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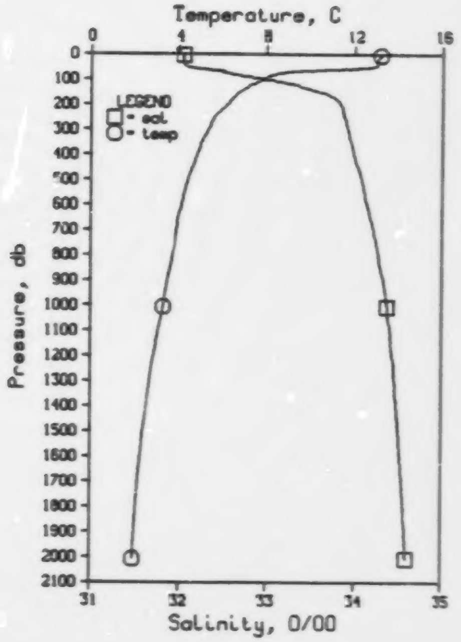

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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 92        DATE 13/10/87
POSITION  51-35.5N, 132- 7.0W   GMT  0: 0    STATION MJ04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                 T              D      EN
    0  13.15   32.04       0   24.10  382.3    0.00    0.00  1498.
   10  13.14   32.04      10   24.10  382.8    0.38    0.02  1498.
   20  13.02   32.04      20   24.12  380.5    0.76    0.08  1498.
   30  13.00   32.04      30   24.13  380.5    1.14    0.17  1498.
   50  12.78   32.10      50   24.21  372.6    1.90    0.48  1497.
   75   8.69   32.51      75   25.25  274.5    2.70    0.99  1484.
  100   7.88   32.95      99   25.70  231.3    3.33    1.54  1481.
  125   7.17   33.36     124   26.12  191.5    3.85    2.14  1480.
  150   6.76   33.58     149   26.36  169.6    4.31    2.78  1479.
  175   6.42   33.77     174   26.55  151.6    4.71    3.44  1478.
  200   6.21   33.83     199   26.62  144.9    5.08    4.14  1478.
  225   5.99   33.86     223   26.69  138.8    5.43    4.91  1477.
  250   5.59   33.88     248   26.74  134.5    5.77    5.73  1476.
  300   5.28   33.92     298   26.81  128.3    6.43    7.57  1476.
  400   4.80   33.98     397   26.92  118.6    7.66   11.96  1475.
  500   4.37   34.07     496   27.03  108.1    8.79   17.14  1475.
  600   4.09   34.14     595   27.12  100.9    9.83   22.99  1476.
  800   3.68   34.27     793   27.26   88.5   11.72   36.40  1478.
 1000   3.28   34.37     990   27.38   78.0   13.38   51.60  1479.
 1200   2.84   34.43    1188   27.47   69.8   14.86   68.12  1481.
 1500   2.35   34.50    1484   27.56   61.0   16.81   94.91  1484.
 2000   1.91   34.59    1976   27.67   51.6   19.59  144.26  1490.

DEEPEST MEASUREMENT:

2006    1.91   34.59    1981   27.67   51.3   19.62  144.89  1490.
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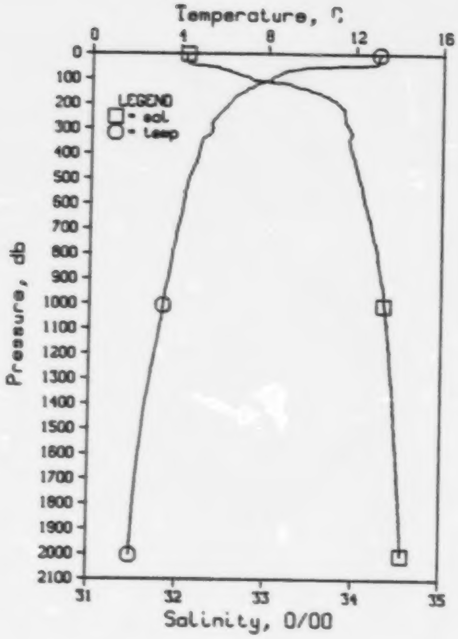

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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 93          DATE 13/10/87
POSITION  51-43.6N, 131-50.0W    GMT  3:47     STATION MJ03
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH  SIGMA   SVA   DELTA    POT.  SOUND
                               T             D       EN
    0  13.05  32.08       0  24.15  377.9   0.00    0.00  1497.
   10  13.05  32.06      10  24.14  379.3   0.38    0.02  1498.
   20  13.01  32.06      20  24.14  379.2   0.76    0.08  1498.
   30  13.00  32.06      30  24.14  379.0   1.14    0.17  1498.
   50  10.95  32.29      50  24.70  326.3   1.87    0.47  1491.
   75   8.68  32.60      75  25.31  268.4   2.59    0.93  1484.
  100   8.15  32.80      99  25.55  246.0   3.23    1.50  1482.
  125   7.42  33.26     124  26.02  201.9   3.79    2.14  1480.
  150   6.95  33.48     149  26.25  179.6   4.27    2.80  1479.
  175   6.45  33.68     174  26.48  158.6   4.68    3.49  1478.
  200   6.23  33.80     199  26.60  147.5   5.07    4.22  1478.
  225   5.96  33.86     223  26.68  139.8   5.42    5.00  1477.
  250   5.68  33.87     248  26.72  135.9   5.77    5.83  1476.
  300   5.47  33.94     298  26.80  129.2   6.43    7.69  1476.
  400   4.84  33.97     397  26.90  120.5   7.68   12.13  1475.
  500   4.41  34.04     496  27.00  111.0   8.84   17.44  1475.
  600   4.17  34.12     595  27.09  103.7   9.91   23.43  1476.
  800   3.71  34.26     793  27.25   89.3  11.83   37.12  1478.
 1000   3.30  34.34     990  27.36   80.2  13.53   52.64  1479.
 1200   2.92  34.40    1188  27.44   72.7  15.06   69.82  1481.
 1500   2.39  34.48    1484  27.54   62.8  17.10   97.68  1484.
 2000   1.92  34.56    1976  27.65   53.3  19.97  148.82  1490.

DEEPEST MEASUREMENT:

2004    1.91   34.56   1980  27.65   53.0  20.00  149.25  1490.
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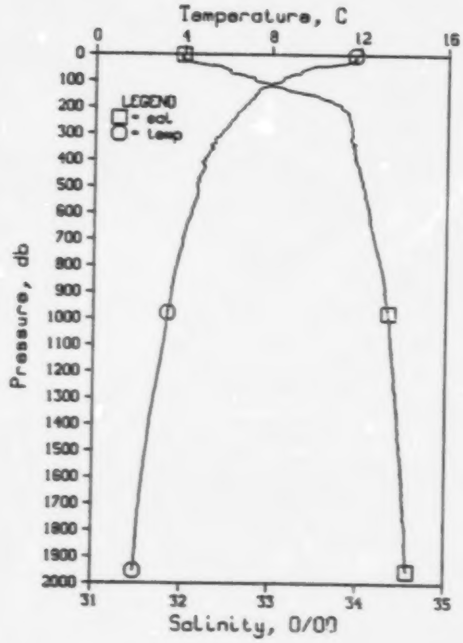

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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 94          DATE 13/10/87
POSITION  51-47.5N, 131-40.7W    GMT  5:33     STATION MJ2A
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH  SIGMA   SVA   DELTA    POT.  SOUND
                               T             D       EN
    0  11.73  31.98       0  24.32  361.3   0.00    0.00  1493.
   10  11.77  31.96      10  24.30  363.9   0.36    0.02  1493.
   20  11.66  31.99      20  24.34  360.0   0.72    0.07  1493.
   30  11.37  32.08      30  24.46  348.3   1.08    0.16  1492.
   50   9.67  32.43      50  25.03  294.8   1.72    0.42  1487.
   75   8.90  32.62      75  25.30  269.6   2.44    0.88  1484.
  100   8.46  32.81      99  25.51  249.9   3.08    1.45  1483.
  125   7.52  33.11     124  25.88  214.1   3.66    2.11  1481.
  150   7.27  33.43     149  26.17  187.6   4.17    2.82  1480.
  175   6.98  33.68     174  26.40  165.7   4.61    3.55  1480.
  200   6.74  33.79     199  26.52  154.6   5.01    4.32  1480.
  225   6.41  33.86     223  26.62  145.5   5.38    5.12  1479.
  250   6.18  33.89     248  26.67  140.8   5.74    5.99  1478.
  300   5.71  33.91     298  26.75  133.9   6.42    7.91  1477.
  400   4.97  33.96     397  26.88  122.5   7.70   12.47  1476.
  500   4.59  34.04     496  26.98  113.3   8.88   17.86  1476.
  600   4.38  34.11     595  27.06  106.2   9.98   24.03  1477.
  800   3.73  34.25     793  27.24   90.4  11.95   38.03  1478.
 1000   3.30  34.34     990  27.36   80.1  13.65   53.53  1479.
 1200   2.93  34.40    1188  27.44   72.9  15.18   70.71  1481.
 1500   2.39  34.48    1484  27.54   62.9  17.20   98.46  1484.
 2000   1.74  34.62    1976  27.71   46.5  19.94  146.22  1490.

DEEPEST MEASUREMENT:

1953    1.88   34.58   1929  27.66   51.5  19.71  141.58  1489.
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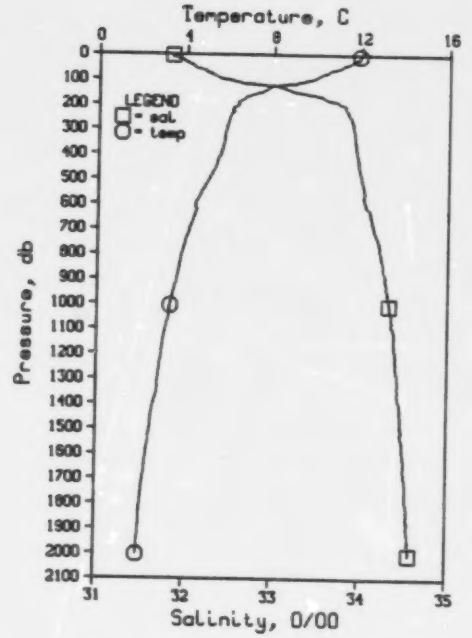

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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 95                    DATE 13/10/87
POSITION  51-51.6N, 131-32.0W              GMT  7:24     STATION MJ02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.   SOUND
                                T              D        EN
    0  11.87  31.83       0   24.18  374.7    0.00     0.00   1493.
   10  11.87  31.83      10   24.18  375.2    0.37     0.02   1493.
   20  11.76  31.91      20   24.26  367.2    0.75     0.08   1493.
   30  11.58  31.96      30   24.33  360.7    1.11     0.17   1493.
   50  11.06  32.08      50   24.52  343.8    1.81     0.45   1491.
   75  10.26  32.26      75   24.79  317.8    2.64     0.98   1489.
  100   9.66  32.44      99   25.03  295.6    3.41     1.66   1487.
  125   7.91  33.02     124   25.76  226.4    4.08     2.43   1482.
  150   7.42  33.23     149   25.99  204.8    4.62     3.18   1481.
  175   6.63  33.56     174   26.36  169.8    5.08     3.94   1479.
  200   6.35  33.76     199   26.55  152.2    5.47     4.70   1478.
  225   6.12  33.81     224   26.62  145.2    5.84     5.50   1478.
  250   5.96  33.87     248   26.68  139.8    6.20     6.36   1478.
  300   5.80  33.91     298   26.74  135.4    6.88     8.28   1478.
  400   5.56  33.94     397   26.80  130.8    8.21    13.02   1478.
  500   5.04  34.00     496   26.90  121.6    9.47    18.80   1478.
  600   4.43  34.05     595   27.01  111.8   10.63    25.29   1477.
  800   3.81  34.23     793   27.21   93.0   12.67    39.77   1478.
 1000   3.31  34.33     990   27.34   81.3   14.42    55.74   1479.
 1200   2.94  34.40    1188   27.43   73.2   15.95    72.94   1481.
 1500   2.44  34.48    1484   27.54   63.2   18.01   101.10   1484.
 2000   1.89  34.58    1976   27.66   51.7   20.86   151.65   1490.

DEEPEST MEASUREMENT:

2005    1.89  34.58    1981   27.67   51.6   20.88   152.18   1490.
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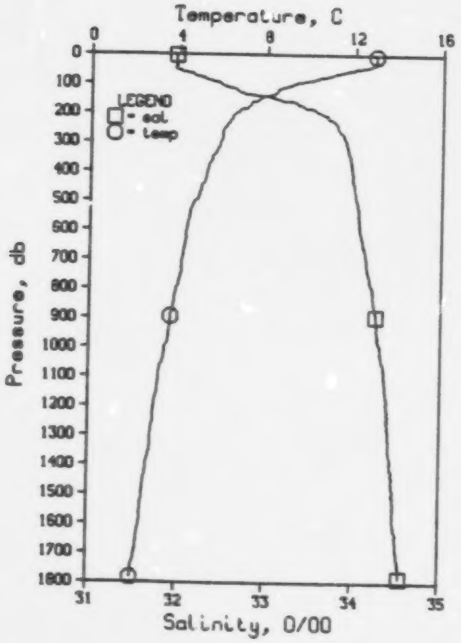

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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 96                    DATE 13/10/87
POSITION  51-55.7N, 131-22.7W              GMT  9:32     STATION MJ1A
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.   SOUND
                                T              D        EN
    0  12.93  31.95       0   24.07  384.9    0.00     0.00   1497.
   10  12.93  31.95      10   24.08  385.0    0.38     0.02   1497.
   20  12.92  31.95      20   24.07  385.4    0.77     0.08   1497.
   30  12.88  31.95      30   24.08  384.9    1.16     0.18   1497.
   50  11.94  31.95      50   24.26  368.6    1.91     0.48   1494.
   75  10.57  32.21      75   24.71  326.1    2.78     1.04   1490.
  100   9.18  32.47      99   25.13  285.6    3.55     1.72   1486.
  125   8.43  32.67     124   25.40  260.4    4.23     2.49   1484.
  150   7.66  33.08     149   25.84  219.0    4.83     3.34   1482.
  175   7.16  33.39     174   26.16  189.4    5.34     4.18   1480.
  200   6.55  33.61     199   26.40  165.9    5.78     5.02   1479.
  225   6.28  33.74     224   26.55  152.6    6.18     5.89   1478.
  250   6.06  33.81     248   26.63  145.4    6.55     6.79   1478.
  300   5.86  33.90     298   26.72  136.9    7.26     8.76   1478.
  400   5.28  33.96     397   26.85  125.8    8.56    13.40   1477.
  500   4.72  34.03     496   26.96  115.5    9.78    18.98   1477.
  600   4.37  34.06     595   27.02  110.4   10.90    25.26   1477.
  800   3.90  34.21     793   27.19   95.6   12.97    39.96   1478.
 1000   3.39  34.31     990   27.32   83.6   14.78    56.53   1480.
 1200   2.96  34.39    1188   27.43   74.0   16.35    74.15   1481.
 1500   2.46  34.46    1484   27.52   64.9   18.44   102.82   1484.

DEEPEST MEASUREMENT:

1784    2.00  34.56    1763   27.64   53.7   20.13   130.78   1487.
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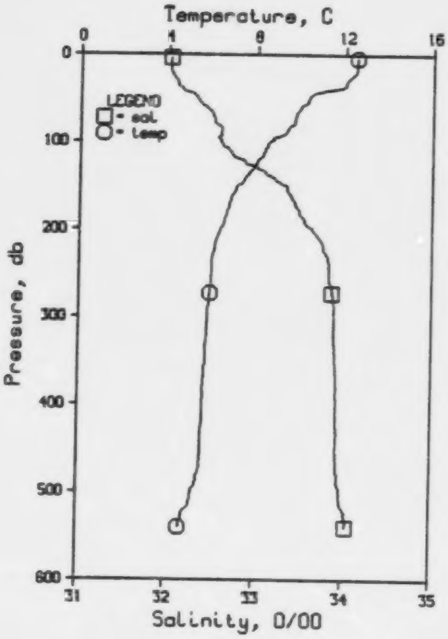

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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 97          DATE 13/10/87
POSITION  52- 0.0N, 131-14.0W     GMT 11:25     STATION MJ01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS    TEMP     SAL    DEPTH    SIGMA    SVA    DELTA     POT.   SOUND
                                    T                D        EN
   0    12.49    32.01       0    24.20   372.5    0.00     0.00   1495.
  10    12.48    32.02      10    24.21   372.3    0.37     0.02   1496.
  20    12.43    32.02      20    24.22   371.2    0.74     0.08   1496.
  30    12.04    32.09      30    24.35   359.5    1.11     0.17   1494.
  50    10.32    32.32      50    24.83   313.7    1.79     0.44   1489.
  75     9.70    32.51      75    25.09   289.9    2.54     0.92   1487.
 100     8.57    32.59      99    25.32   267.7    3.24     1.54   1484.
 125     8.00    32.88     124    25.63   238.7    3.87     2.27   1482.
 150     7.12    33.35     149    26.12   192.0    4.41     3.02   1480.
 175     6.75    33.46     174    26.26   179.3    4.87     3.79   1479.
 200     6.[illegible]    33.64     199    26.45   161.4    5.30     4.61   1478.
 225     6.12    33.77     223    26.59   148.6    5.69     5.43   1478.
 250     6.01    33.83     248    26.65   143.1    6.05     6.31   1478.
 300     5.81    33.89     298    26.72   136.8    6.74     8.26   1478.
 400     5.64    33.92     397    26.77   133.5    8.09    13.08   1479.
 500     5.21    33.98     496    26.86   125.2    9.41    19.12   1479.

DEEPEST MEASUREMENT:

 540     4.66    34.05     536    26.98   113.5    9.89    21.65   1477.
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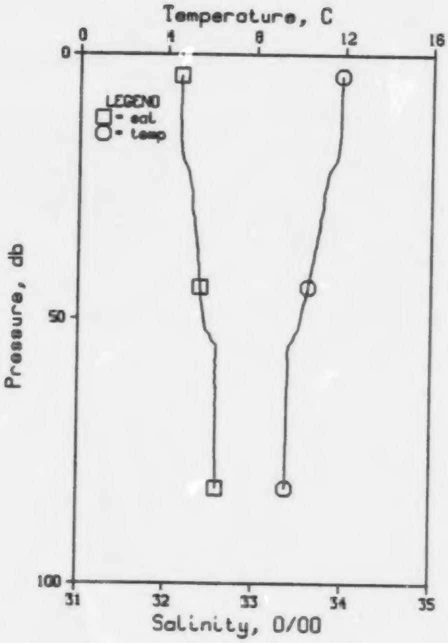

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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 98          DATE 13/10/87
POSITION  52- 2.0N, 131-10.3W     GMT 12:12     STATION MJ00
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS    TEMP     SAL    DEPTH    SIGMA    SVA    DELTA     POT.   SOUND
                                    T                D        EN
   0    11.85    32.15       0    24.43   350.8    0.00     0.00   1493.
  10    11.84    32.14      10    24.43   351.4    0.35     0.02   1493.
  20    11.66    32.18      20    24.49   345.8    0.70     0.07   1493.
  30    11.02    32.30      30    24.69   326.4    1.03     0.16   1491.
  50    10.09    32.42      50    24.95   302.2    1.66     0.41   1488.
  75     9.51    32.57      75    25.16   282.6    2.38     0.87   1487.

DEEPEST MEASUREMENT:

  82     9.48    32.59      82    25.18   281.3    2.57     1.02   1487.
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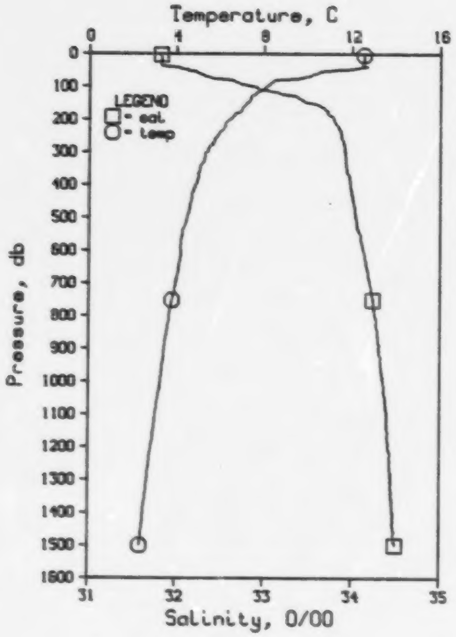

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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 99          DATE 14/10/87
POSITION  51-41.8N, 131-13.6W   GMT  0:17     STATION  M88
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL    DEPTH   SIGMA   SVA   DELTA    POT.   SOUND
                                 T             D       EN
    0  12.52   31.82       0   24.05  387.2   0.00    0.00   1495.
   10  12.52   31.82      10   24.05  387.4   0.39    0.02   1495.
   20  12.52   31.82      20   24.05  387.7   0.77    0.08   1496.
   30  12.49   31.82      30   24.05  387.7   1.16    0.18   1496.
   50  11.23   32.12      50   24.52  343.2   1.91    0.48   1492.
   75   9.61   32.40      75   25.01  296.9   2.70    0.98   1487.
  100   8.07   32.88      99   25.62  239.2   3.35    1.56   1482.
  125   7.53   33.24     124   25.98  205.2   3.91    2.20   1481.
  150   7.20   33.50     149   26.24  181.3   4.39    2.87   1480.
  175   6.93   33.72     174   26.44  162.1   4.81    3.57   1480.
  200   6.44   33.78     199   26.56  151.5   5.21    4.32   1478.
  225   6.16   33.84     223   26.64  143.6   5.57    5.12   1478.
  250   5.86   33.87     248   26.70  138.0   5.92    5.97   1477.
  300   5.40   33.91     298   26.79  130.2   6.59    7.84   1476.
  400   4.85   33.98     397   26.90  119.9   7.84   12.28   1476.
  500   4.48   34.04     496   26.99  112.0   9.00   17.59   1476.
  600   4.19   34.12     595   27.09  103.3  10.07   23.59   1476.
  800   3.67   34.26     793   27.25   89.1  11.99   37.24   1478.
 1000   3.29   34.35     990   27.36   79.4  13.67   52.59   1479.
 1200   2.86   34.42    1188   27.45   71.2  15.16   69.31   1481.
 1500   2.37   34.50    1484   27.56   61.0  17.15   96.53   1484.

DEEPEST MEASUREMENT:

1501    2.36   34.50    1485   27.56   60.9  17.15   96.62   1484.
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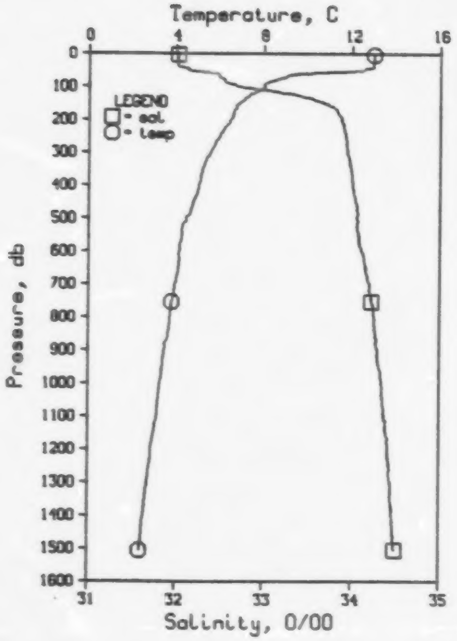

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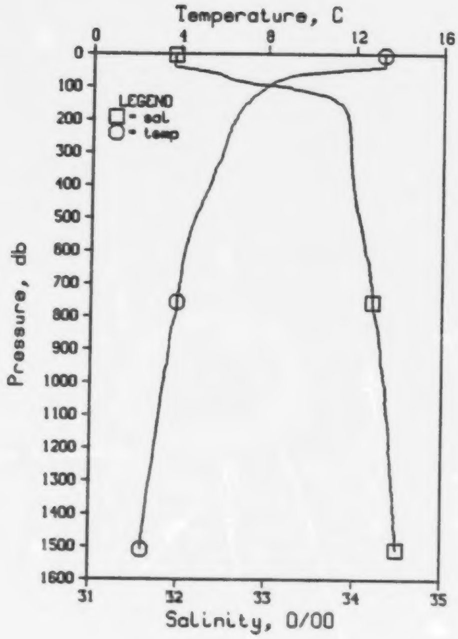
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-100          DATE 14/10/87
POSITION  51-23.5N, 131-13.8W   GMT  3: 3     STATION M103
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL    DEPTH   SIGMA   SVA   DELTA    POT.   SOUND
                                 T             D       EN
    0  12.97   32.01       0   24.11  381.3   0.00    0.00   1497.
   10  12.97   32.01      10   24.11  381.7   0.38    0.02   1497.
   20  12.97   32.01      20   24.11  382.0   0.76    0.08   1497.
   30  12.95   32.01      30   24.11  382.0   1.15    0.18   1497.
   50  12.52   32.13      50   24.29  365.4   1.90    0.48   1496.
   75   8.78   32.50      75   25.22  276.7   2.66    0.96   1484.
  100   8.01   32.69      99   25.49  252.0   3.32    1.55   1482.
  125   7.34   33.35     124   26.10  194.1   3.88    2.18   1480.
  150   6.88   33.67     149   26.41  164.7   4.32    2.81   1479.
  175   6.62   33.82     174   26.57  150.3   4.71    3.45   1479.
  200   6.46   33.88     199   26.63  144.4   5.08    4.15   1479.
  225   6.20   33.90     223   26.68  139.9   5.44    4.92   1478.
  250   5.99   33.92     248   26.73  135.7   5.78    5.76   1478.
  300   5.57   33.94     298   26.79  129.8   6.44    7.61   1477.
  400   5.04   34.01     397   26.91  119.7   7.68   12.02   1476.
  500   4.45   34.05     496   27.01  110.6   8.83   17.29   1476.
  600   4.14   34.11     595   27.09  103.7   9.91   23.31   1476.
  800   3.72   34.26     793   27.25   89.6  11.84   37.05   1478.
 1000   3.27   34.34     990   27.36   79.7  13.55   52.69   1479.
 1200   2.86   34.42    1188   27.46   70.9  15.07   69.73   1481.
 1500   2.38   34.49    1484   27.55   61.8  17.06   97.09   1484.

DEEPEST MEASUREMENT:

1506    2.37   34.50    1490   27.56   61.2  17.10   97.66   1484.
```



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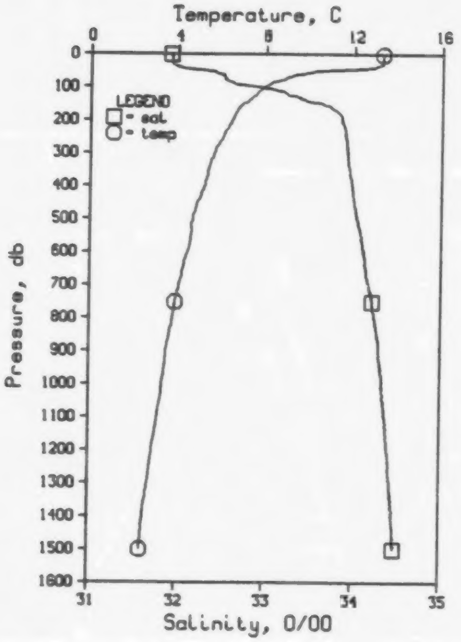
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-101              DATE 14/10/87
POSITION  51- 3.2N, 131-11.2W   GMT  5:51    STATION  M89
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS    TEMP     SAL    DEPTH    SIGMA    SVA    DELTA     POT.   SOUND
                                    T               D        EN
    0   13.26    31.93       0    24.00   392.4    0.00     0.00   1498.
   10   13.26    31.93      10    23.99   393.0    0.39     0.02   1498.
   20   13.26    31.93      20    23.99   393.5    0.79     0.08   1498.
   30   13.25    31.92      30    23.99   393.8    1.18     0.18   1498.
   50   11.33    32.19      50    24.56   340.1    1.94     0.49   1492.
   75    8.70    32.55      75    25.27   272.4    2.68     0.96   1484.
  100    7.92    33.16      99    25.87   216.0    3.30     1.51   1482.
  125    7.41    33.62     124    26.30   175.5    3.79     2.07   1481.
  150    7.04    33.80     149    26.49   157.3    4.20     2.64   1480.
  175    6.71    33.88     174    26.60   147.1    4.58     3.27   1479.
  200    6.52    33.91     199    26.65   142.9    4.94     3.96   1479.
  225    6.32    33.92     223    26.68   139.8    5.29     4.72   1479.
  250    6.18    33.93     248    26.71   137.9    5.64     5.56   1478.
  300    5.95    33.94     298    26.75   134.5    6.32     7.47   1478.
  400    5.39    33.97     397    26.84   126.6    7.63    12.13   1478.
  500    4.71    34.04     496    26.97   114.5    8.84    17.66   1477.
  600    4.27    34.11     595    27.08   105.0    9.93    23.78   1477.
  800    3.83    34.23     793    27.21    93.3   11.89    37.76   1478.
 1000    3.33    34.33     990    27.35    81.1   13.62    53.55   1479.
 1200    2.95    34.41    1188    27.44    72.8   15.15    70.68   1481.
 1500    2.40    34.49    1484    27.55    62.1   17.16    98.27   1484.

DEEPEST MEASUREMENT:

1509     2.39    34.49    1493    27.56    61.6   17.22    99.13   1484.
```



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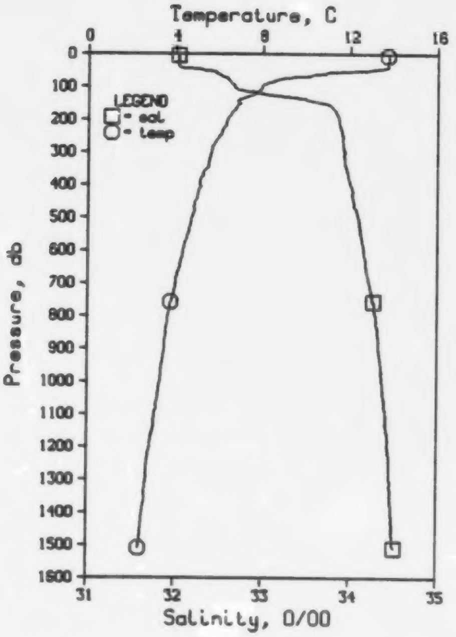
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-102              DATE 14/10/87
POSITION  50-43.0N, 131- 8.3W   GMT  8:45    STATION MHOS
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS    TEMP     SAL    DEPTH    SIGMA    SVA    DELTA     POT.   SOUND
                                    T               D        EN
    0   13.27    31.91       0    23.97   394.4    0.00     0.00   1498.
   10   13.26    31.93      10    23.99   393.4    0.39     0.02   1498.
   20   13.26    31.92      20    23.98   393.8    0.79     0.08   1498.
   30   13.27    31.93      30    23.99   393.8    1.18     0.18   1498.
   50   10.74    32.30      50    24.75   321.8    1.93     0.48   1490.
   75    8.85    32.54      75    25.24   275.4    2.65     0.94   1484.
  100    7.88    32.94      99    25.70   231.7    3.30     1.52   1481.
  125    7.53    33.25     124    25.99   204.4    3.84     2.13   1481.
  150    6.95    33.63     149    26.37   168.8    4.31     2.79   1479.
  175    6.66    33.80     174    26.54   152.5    4.71     3.45   1479.
  200    6.45    33.86     199    26.62   145.6    5.08     4.16   1479.
  225    6.28    33.89     223    26.66   141.9    5.44     4.93   1478.
  250    6.03    33.90     248    26.70   138.2    5.78     5.78   1478.
  300    5.66    33.93     298    26.77   132.1    6.46     7.67   1477.
  400    5.23    33.98     397    26.86   124.4    7.74    12.24   1477.
  500    4.69    34.03     496    26.97   114.9    8.94    17.71   1477.
  600    4.46    34.10     595    27.05   107.8   10.05    23.94   1477.
  800    3.80    34.24     793    27.23    91.9   12.04    38.07   1478.
 1000    3.34    34.33     990    27.34    81.2   13.75    53.76   1480.
 1200    2.92    34.40    1188    27.44    72.8   15.29    71.02   1481.
 1500    2.38    34.48    1484    27.55    62.3   17.30    98.52   1484.

DEEPEST MEASUREMENT:

1501     2.38    34.48    1485    27.55    62.4   17.30    98.61   1484.
```



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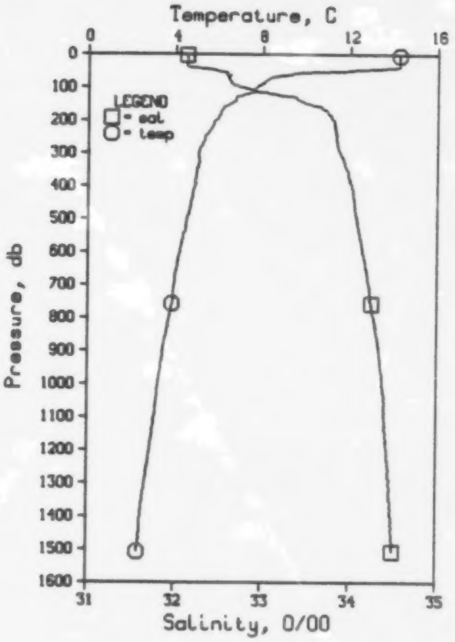
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-103         DATE 14/10/87
POSITION  50-25.0N, 130-36.5W   GMT 12:24    STATION MG05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0  13.70  32.02      0   23.97  394.3   0.00    0.00  1500.
   10  13.73  32.02     10   23.97  395.4   0.39    0.02  1500.
   20  13.73  32.02     20   23.97  395.5   0.79    0.08  1500.
   30  13.70  32.02     30   23.97  395.3   1.19    0.18  1500.
   50  12.90  32.31     50   24.35  359.5   1.96    0.50  1498.
   75   8.89  32.59     75   25.27  272.1   2.72    0.98  1484.
  100   7.94  32.67     99   25.48  252.8   3.38    1.56  1481.
  125   7.54  33.05    124   25.83  219.4   3.98    2.25  1481.
  150   6.88  33.65    149   26.40  166.1   4.45    2.90  1479.
  175   6.63  33.83    174   26.57  149.9   4.83    3.54  1479.
  200   6.35  33.87    199   26.64  143.9   5.20    4.24  1478.
  225   6.20  33.89    224   26.67  140.9   5.56    5.02  1478.
  250   5.99  33.91    248   26.72  136.6   5.91    5.86  1478.
  300   5.63  33.93    298   26.78  131.6   6.58    7.74  1477.
  400   5.11  34.00    397   26.89  121.3   7.85   12.26  1477.
  500   4.73  34.09    496   27.01  111.1   9.01   17.60  1477.
  600   4.33  34.15    595   27.10  102.7  10.09   23.60  1477.
  800   3.65  34.29    793   27.28   86.7  11.98   37.09  1478.
 1000   3.31  34.36    991   27.37   78.8  13.63   52.17  1479.
 1200   2.85  34.43   1188   27.47   69.8  15.10   68.65  1481.
 1500   2.37  34.50   1484   27.56   61.1  17.05   95.39  1484.

DEEPEST MEASUREMENT:

1509    2.37  34.51   1493   27.57   60.0  17.11   96.22  1484.
```



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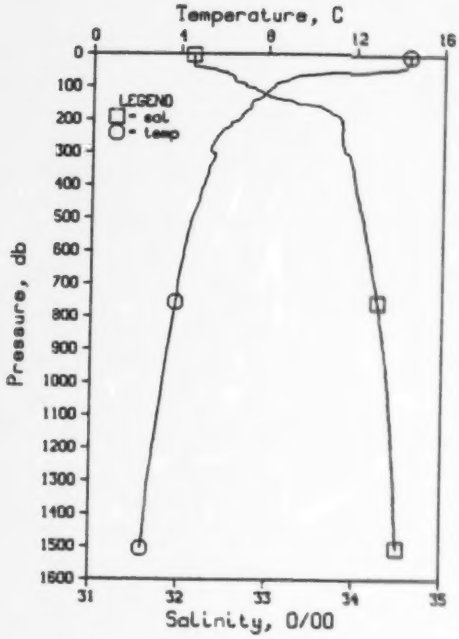
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-104         DATE 14/10/87
POSITION  50- 6.0N, 130- 6.9W   GMT 16: 7    STATION MF05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0  14.21  32.12      0   23.95  397.1   0.00    0.00  1501.
   10  14.21  32.13     10   23.95  397.1   0.40    0.02  1501.
   20  14.22  32.13     20   23.95  397.3   0.79    0.08  1502.
   30  14.22  32.12     30   23.95  397.9   1.19    0.18  1502.
   50  11.85  32.47     50   24.67  328.8   1.95    0.49  1495.
   75   8.25  32.60     75   25.38  261.7   2.65    0.93  1482.
  100   7.72  32.74     99   25.56  244.6   3.28    1.50  1481.
  125   7.08  33.18    124   26.00  203.7   3.85    2.14  1479.
  150   6.55  33.49    149   26.31  174.2   4.31    2.78  1478.
  175   6.08  33.74    174   26.57  150.0   4.70    3.44  1477.
  200   5.85  33.81    199   26.65  142.1   5.07    4.14  1476.
  225   5.64  33.82    224   26.69  138.6   5.42    4.90  1476.
  250   5.35  33.84    248   26.74  134.2   5.76    5.72  1475.
  300   5.06  33.89    298   26.81  127.8   6.42    7.57  1475.
  400   4.89  34.02    397   26.93  117.2   7.65   11.93  1476.
  500   4.53  34.08    496   27.02  109.5   8.78   17.14  1476.
  600   4.21  34.14    595   27.10  102.3   9.84   23.08  1476.
  800   3.72  34.28    793   27.26   88.3  11.74   36.61  1478.
 1000   3.23  34.38    991   27.39   76.9  13.38   51.60  1479.
 1200   2.87  34.43   1188   27.47   69.8  14.85   68.05  1481.
 1500   2.31  34.50   1484   27.57   60.2  16.78   94.55  1484.

DEEPEST MEASUREMENT:

1508    2.31  34.50   1492   27.57   60.2  16.83   95.29  1484.
```



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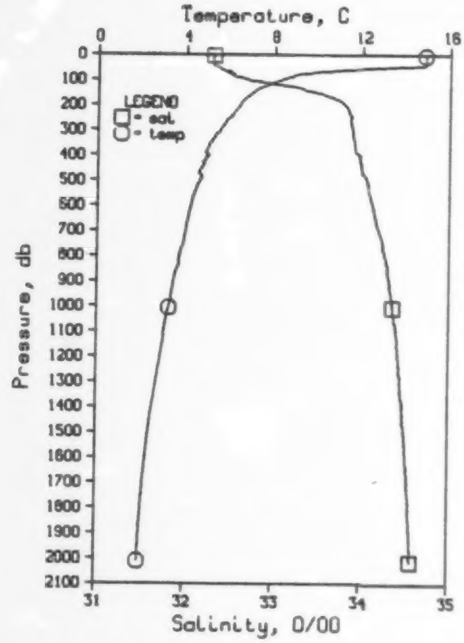
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-105          DATE 14/10/87
POSITION  49-47.8N, 129-36.0W    GMT 20:20     STATION MEOS
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA     POT.  SOUND
                                T             D        EN
    0  14.38  32.13       0  23.92  399.5   0.00     0.00  1502.
   10  14.39  32.13      10  23.93  399.6   0.40     0.02  1502.
   20  14.39  32.13      20  23.93  400.1   0.80     0.08  1503.
   30  14.38  32.14      30  23.96  396.9   1.20     0.18  1503.
   50  12.69  32.19      50  24.16  349.5   1.96     0.49  1497.
   75   9.00  32.60      75  25.26  272.8   2.71     0.96  1485.
  100   8.32  32.76      99  25.51  250.0   3.36     1.54  1483.
  125   7.79  32.98     124  25.74  228.1   3.95     2.22  1482.
  150   7.21  33.31     149  26.08  196.1   4.48     2.96  1480.
  175   6.95  33.70     174  26.42  164.0   4.92     3.69  1480.
  200   6.64  33.83     199  26.57  150.3   5.33     4.41  1479.
  225   6.15  33.84     224  26.64  143.5   5.68     5.24  1478.
  250   5.71  33.84     248  26.69  138.8   6.03     6.09  1478.
  300   5.39  33.87     298  26.76  132.9   6.71     7.99  1478.
  400   5.10  33.99     397  26.89  121.5   7.90    12.49  1477.
  500   4.56  34.08     496  27.02  109.8   9.14    17.80  1476.
  600   4.21  34.16     595  27.12  101.0  10.19    23.73  1476.
  800   3.72  34.27     793  27.26   88.5  12.09    37.19  1478.
 1000   3.28  34.37     991  27.38   77.6  13.74 [illegible] 1479.
 1200   2.85  34.43    1188  27.47   70.0  15.21    68.78  1481.
 1500   2.37  34.50    1484  27.57   60.6  17.17    95.62  1484.

DEEPEST MEASUREMENT:

1506    2.36  34.50    1490  27.57   60.6  17.20    96.18  1484.
```



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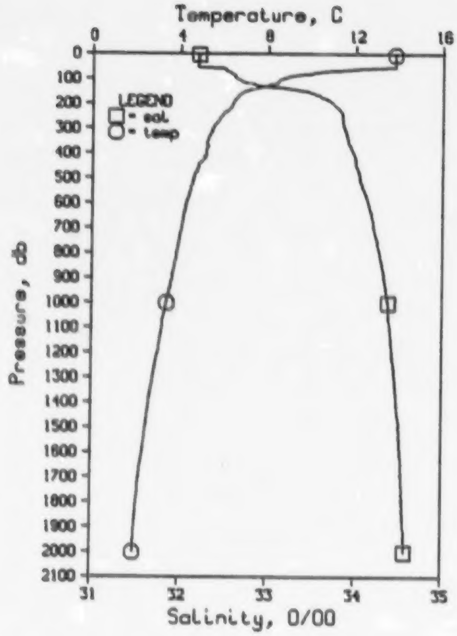
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-106          DATE 15/10/87
POSITION  49-16.0N, 129- 9.4W    GMT  0:40     STATION MOO6
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA     POT.  SOUND
                                T             D        EN
    0  14.85  32.30       0  23.95  396.6   0.00     0.00  1504.
   10  14.85  32.30      10  23.94  397.5   0.40     0.02  1504.
   20  14.86  32.29      20  23.94  398.1   0.79     0.08  1504.
   30  14.84  32.30      30  23.95  397.3   1.19     0.18  1504.
   50  13.22  32.36      50  24.33  362.0   1.98     0.50  1499.
   75   9.39  32.49      75  25.11  287.1   2.76     1.00  1486.
  100   8.28  32.70      99  25.45  255.0   3.44     1.60  1483.
  125   7.54  33.15     124  25.91  211.7   4.03     2.27  1481.
  150   7.02  33.46     149  26.23  181.9   4.51     2.95  1480.
  175   6.65  33.69     174  26.45  161.0   4.94     3.66  1479.
  200   6.44  33.80     199  26.57  150.0   5.33     4.39  1479.
  225   6.21  33.85     224  26.64  144.1   5.69     5.19  1478.
  250   5.97  33.87     248  26.68  140.0   6.05     6.04  1478.
  300   5.54  33.89     298  26.75  133.8   6.73     7.96  1477.
  400   5.03  33.98     397  26.88  122.0   8.01    12.50  1476.
  500   4.62  34.06     496  27.00  112.1   9.18    17.88  1476.
  600   4.24  34.12     595  27.08  104.1  10.26    23.93  1476.
  800   3.73  34.26     793  27.25   89.4  12.20    37.70  1478.
 1000   3.26  34.35     991  27.37   79.1  13.87    53.05  1479.
 1200   2.90  34.42    1188  27.45   71.2  15.37    69.75  1481.
 1500   2.38  34.49    1484  27.56   61.5  17.35    96.97  1484.
 2000   1.95  34.57    1976  27.66   52.7  20.16   146.85  1490.

DEEPEST MEASUREMENT:

2012    1.94  34.58    1988  27.66   52.4  20.22   148.14  1491.
```



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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-107          DATE 15/10/87
POSITION  48-44.6N, 127-40.0W    GMT  7:51     STATION MP06
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  13.78  32.20       0   24.10  382.8    0.00     0.00  1500.
   10  13.78  32.20      10   24.10  383.0    0.38     0.02  1500.
   20  13.78  32.20      20   24.09  383.7    0.77     0.08  1500.
   30  13.78  32.19      30   24.09  384.2    1.15     0.18  1500.
   50  13.77  32.19      50   24.09  384.8    1.92     0.49  1501.
   75  10.05  32.56      75   25.07  291.8    2.76     1.02  1489.
  100   8.61  32.63      99   25.35  265.4    3.45     1.64  1484.
  125   8.01  32.85     124   25.61  241.0    4.09     2.37  1482.
  150   6.93  33.42     149   26.21  183.7    4.63     3.11  1479.
  175   6.57  33.60     174   26.39  166.5    5.06     3.83  1478.
  200   6.36  33.73     199   26.53  154.0    5.46     4.59  1478.
  225   6.17  33.80     224   26.61  146.9    5.83     5.41  1478.
  250   5.85  33.84     248   26.68  140.3    6.19     6.27  1477.
  300   5.45  33.86     298   26.75  134.3    6.88     8.20  1476.
  400   5.17  33.97     397   26.86  124.3    8.17    12.80  1477.
  500   4.58  34.04     496   26.99  112.9    9.35    18.21  1476.
  600   4.37  34.13     595   27.10  103.1   10.43    24.38  1477.
  800   3.84  34.27     793   27.24   90.3   12.36    37.97  1478.
 1000   3.39  34.37     991   27.37   78.9   14.05    53.44  1480.
 1200   3.01  34.42    1188   27.44   73.8   15.57    70.42  1482.
 1500   2.47  34.49    1484   27.55   63.6   17.57    97.93  1484.
 2000   1.95  34.58    1976   27.66   52.5   20.39   148.08  1490.

DEEPEST MEASUREMENT:

2002    1.94  34.58    1978   27.66   52.5   20.40   148.30  1491.
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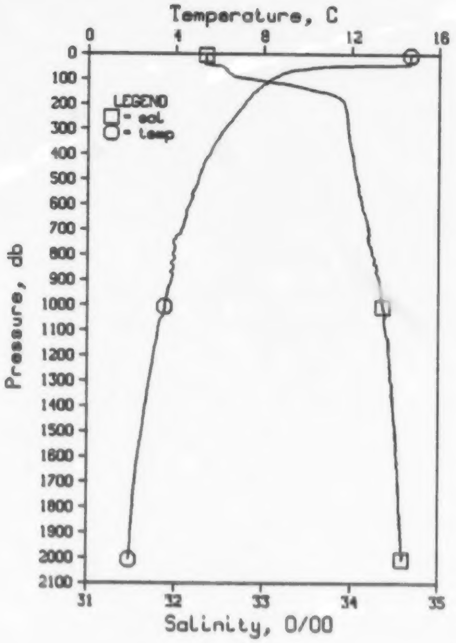

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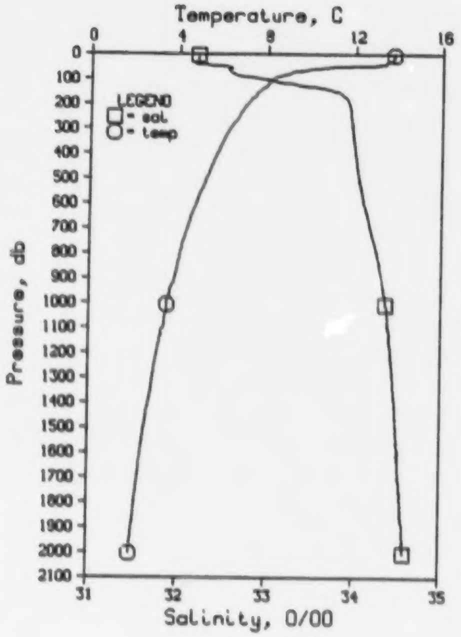
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-108          DATE 15/10/87
POSITION  48-20.2N, 127- 6.1W    GMT 12:24     STATION MA05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  14.65  32.34       0   24.02  390.0    0.00     0.00  1503.
   10  14.65  32.33      10   24.02  390.4    0.39     0.02  1503.
   20  14.65  32.34      20   24.02  390.5    0.78     0.08  1503.
   30  14.65  32.33      30   24.01  391.5    1.17     0.18  1503.
   50  10.68  32.50      50   24.91  305.9    1.91     0.48  1490.
   75   8.92  32.60      75   25.28  271.7    2.63     0.93  1485.
  100   8.36  32.85      99   25.56  244.9    3.28     1.51  1483.
  125   7.91  33.33     124   26.00  204.0    3.84     2.16  1482.
  150   7.61  33.64     149   26.29  176.8    4.32     2.82  1482.
  175   7.33  33.86     174   26.50  157.1    4.73     3.50  1482.
  200   7.14  33.91     199   26.56  151.2    5.11     4.24  1481.
  225   6.89  33.93     224   26.62  146.5    5.49     5.04  1481.
  250   6.66  33.94     248   26.65  143.4    5.85     5.92  1480.
  300   6.20  33.96     298   26.73  136.4    6.55     7.87  1479.
  400   5.54  34.01     397   26.85  126.0    7.86    12.55  1478.
  500   5.04  34.06     496   26.95  117.2    9.07    18.11  1478.
  600   4.64  34.11     595   27.04  109.3   10.20    24.44  1478.
  800   3.88  34.23     793   27.21   93.3   12.21    38.72  1478.
 1000   3.53  34.36     991   27.34   81.8   13.96    54.71  1480.
 1200   3.00  34.43    1188   27.45   72.0   15.49    71.80  1482.
 1500   2.48  34.50    1484   27.55   62.5   17.49    99.36  1484.
 2000   1.92  34.58    1976   27.67   51.7   20.30   149.26  1490.

DEEPEST MEASUREMENT:

2007    1.92  34.59    1983   27.67   51.5   20.34   150.00  1491.
```

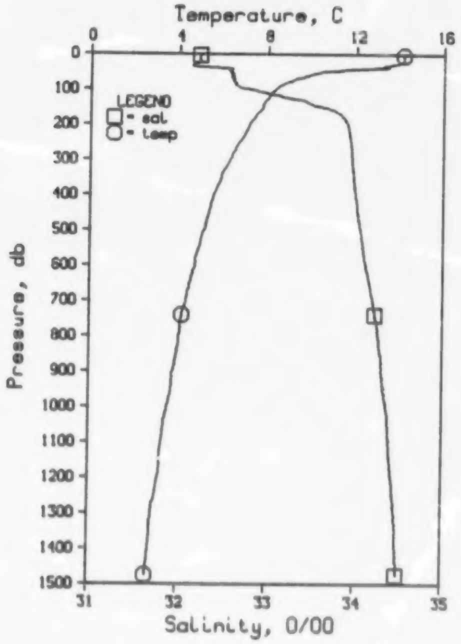


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-109          DATE 15/10/87
POSITION  48-30.2N, 126-52.5W    GMT 14:40      STATION MA04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  13.71  32.20       0   24.11  381.4    0.00     0.00  1500.
   10  13.70  32.20      10   24.11  381.4    0.38     0.02  1500.
   20  13.67  32.20      20   24.12  381.3    0.76     0.08  1500.
   30  13.45  32.18      30   24.14  379.1    1.14     0.17  1499.
   50  11.01  32.53      50   24.87  309.9    1.87     0.47  1492.
   75   9.02  32.57      75   25.24  275.1    2.60     0.93  1485.
  100   8.32  32.93      99   25.64  237.1    3.24     1.50  1483.
  125   7.95  33.33     124   26.00  204.0    3.79     2.13  1483.
  150   7.59  33.75     149   26.38  168.3    4.25     2.77  1482.
  175   7.33  33.88     174   26.52  155.2    4.65     3.43  1482.
  200   7.06  33.92     199   26.58  149.1    5.03     4.18  1481.
  225   6.96  33.94     224   26.63  145.4    5.40     4.96  1481.
  250   6.70  33.95     248   26.65  143.5    5.76     5.83  1481.
  300   6.28  33.97     298   26.72  137.0    6.46     7.80  1480.
  400   5.72  34.00     397   26.82  128.7    7.79    12.53  1479.
  500   5.24  34.04     496   26.91  120.5    9.04    18.35  1479.
  600   4.80  34.10     595   27.01  112.3   10.20    24.77  1479.
  800   4.09  34.25     793   27.21   94.2   12.28    39.38  1479.
 1000   3.49  34.36     991   27.35   81.4   14.03    55.49  1480.
 1200   3.06  34.42    1188   27.43   73.5   15.57    72.84  1482.
 1500   2.51  34.49    1484   27.54   63.4   17.62   100.96  1484.
 2000   1.91  34.59    1976   27.67   51.2   20.48   151.78  1490.

DEEPEST MEASUREMENT:

2005    1.91   34.59   1981   27.67   51.4   20.51   152.30  1490.
```



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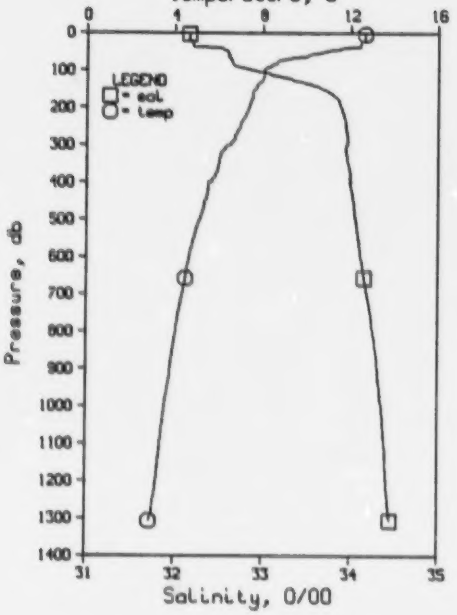
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-110          DATE 15/10/87
POSITION  48-36.2N, 126-44.2W    GMT 16:28      STATION MA38
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  14.13  32.22       0   24.04  388.1    0.00     0.00  1501.
   10  14.13  32.22      10   24.04  388.5    0.39     0.02  1501.
   20  14.10  32.22      20   24.04  388.4    0.78     0.08  1501.
   30  13.51  32.15      30   24.12  381.7    1.16     0.18  1500.
   50  10.41  32.58      50   25.02  296.2    1.85     0.45  1490.
   75   9.06  32.60      75   25.25  274.1    2.56     0.90  1485.
  100   8.32  32.78      99   25.51  249.6    3.22     1.49  1483.
  125   8.01  33.24     124   25.91  211.8    3.79     2.15  1483.
  150   7.77  33.62     149   26.24  180.8    4.28     2.83  1483.
  175   7.45  33.84     174   26.46  160.4    4.70     3.52  1482.
  200   7.16  33.91     199   26.56  151.7    5.09     4.27  1481.
  225   6.98  33.92     224   26.60  148.2    5.46     5.08  1481.
  250   6.70  33.94     248   26.65  143.4    5.83     5.96  1481.
  300   6.27  33.96     298   26.72  137.4    6.53     7.93  1480.
  400   5.55  34.00     397   26.84  126.8    7.85    12.64  1478.
  500   5.12  34.05     496   26.93  118.3    9.08    18.26  1478.
  600   4.73  34.12     595   27.03  110.1   10.22    24.65  1479.
  800   4.01  34.26     793   27.22   92.9   12.23    38.94  1479.
 1000   3.51  34.36     991   27.35   81.5   13.98    54.99  1480.
 1200   3.12  34.43    1188   27.44   73.3   15.53    72.27  1482.
 1500   2.61  34.32    1484   27.40   76.7   17.78   103.31  1485.

DEEPEST MEASUREMENT:

1476    2.61   34.49   1460   27.54   64.2   17.61   100.74  1485.
```

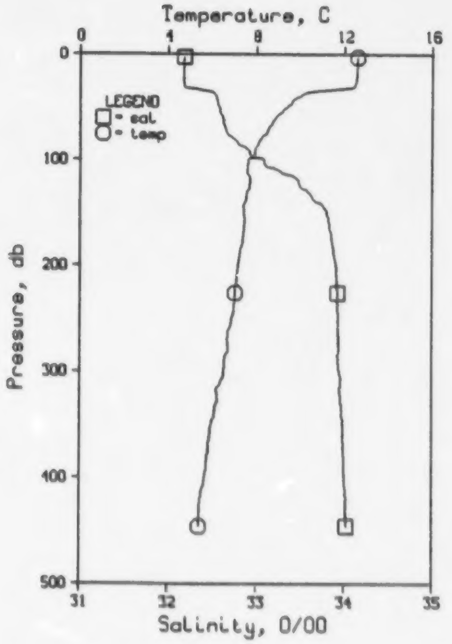


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-111          DATE 15/10/87
POSITION  48-40.1N, 126-38.9W    GMT 17:44     STATION MA03
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH    SIGMA    SVA   DELTA     POT.  SOUND
                                  T              D        EN
    0  12.63   32.16       0    24.29  364.1    0.00     0.00  1496.
   10  12.62   32.16      10    24.29  364.4    0.36     0.02  1496.
   20  12.58   32.16      20    24.30  363.5    0.73     0.07  1496.
   30  12.42   32.20      30    24.36  358.4    1.09     0.17  1496.
   50  10.76   32.59      50    24.97  300.6    1.75     0.43  1491.
   75   8.65   32.64      75    25.35  265.0    2.46     0.88  1484.
  100   8.03   32.69      99    25.64  237.7    3.10     1.45  1482.
  125   7.90 [illegible]  124    25.98  204.1    3.65     2.08  1483.
  150   7.62   33.67     149    26.31  174.4    4.13     2.74  1482.
  175   7.49   33.84     174    26.46  161.1    4.53     3.42  1482.
  200   7.33   33.89     199    26.52  155.4    4.93     4.18  1482.
  225   7.16   33.92     224    26.57  151.1    5.31     5.01  1482.
  250   6.95   33.94     248    26.61  147.1    5.68     5.90  1482.
  300   6.45   33.96     298    26.69  140.1    6.40     7.91  1480.
  400   5.49   33.98     397    26.83  127.3    7.73    12.67  1478.
  500   5.12   34.06     496    26.94  118.3    8.96    18.30  1478.
  600   4.66   34.11     595    27.03  109.5   10.10    24.65  1478.
  800   4.05   34.26     793    27.21   93.7   12.13    39.03  1479.
 1000   3.57   34.36     991    27.34   82.2   13.97    55.09  1481.
 1200   3.20   34.41    1188    27.42   75.4   15.44    72.64  1482.

DEEPEST MEASUREMENT:

1307    2.90   34.46    1294    27.48   69.2   16.21    82.50  1483.
```

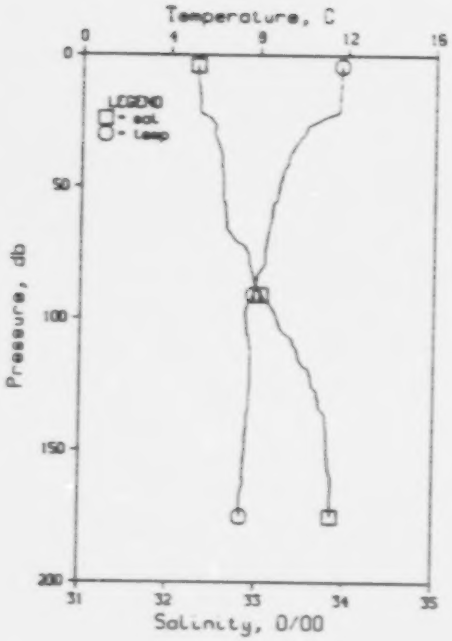


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-112          DATE 15/10/87
POSITION  48-45.2N, 126-32.0W    GMT 19:12     STATION MA2B
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP     SAL   DEPTH    SIGMA    SVA   DELTA     POT.  SOUND
                                  T              D        EN
    0  12.58   32.18       0    24.31  362.2    0.00     0.00  1496.
   10  12.58   32.17      10    24.31  362.8    0.36     0.02  1496.
   20  12.55   32.17      20    24.31  362.6    0.73     0.07  1496.
   30  12.45   32.18      30    24.34  360.2    1.09     0.17  1496.
   50   9.37   32.57      50    25.18  280.0    1.69     0.41  1486.
   75   8.43   32.67      75    25.40  259.6    2.36     0.84  1483.
  100   7.62   33.09      99    25.85  217.3    2.97     1.37  1481.
  125   7.67   33.49     124    26.16  188.3    3.47     1.95  1482.
  150   7.43   33.79     149    26.43  162.9    3.91     2.56  1482.
  175   7.37   33.85     174    26.48  158.5    4.31     3.22  1482.
  200   7.16   33.90     199    26.56  151.9    4.69     3.96  1482.
  225   7.03   33.92     223    26.59  149.0    5.07     4.78  1481.
  250   6.87   33.93     248    26.62  146.6    5.44     5.68  1481.
  300   6.52   33.94     298    26.67  141.9    6.16     7.70  1481.
  400   5.66   34.00     397    26.83  127.7    7.50    12.45  1479.

DEEPEST MEASUREMENT:

 446    5.39   34.02     443    26.88  123.3    8.08    14.94  1479.
```



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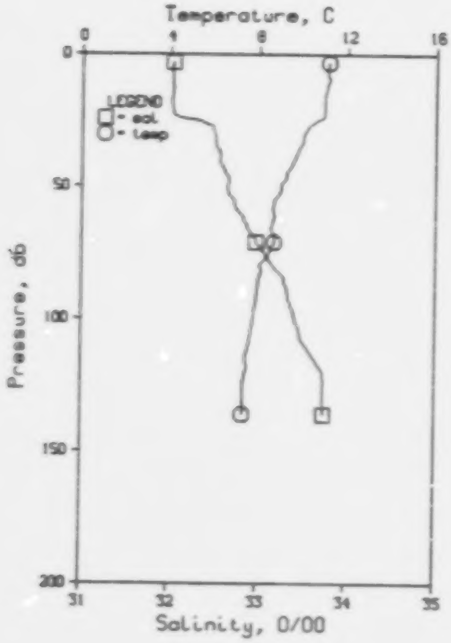
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-113        DATE 15/10/87
POSITION  48-50.2N, 126-25.3W   GMT 20: 9    STATION MA02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
   0   11.68   32.30      0   24.57  337.2   0.00    0.00  1493.
  10   11.67   32.30     10   24.58  336.7   0.34    0.02  1493.
  20   11.62   32.33     20   24.61  334.5   0.67    0.07  1493.
  30   10.03   32.49     30   25.01  296.1   0.98    0.15  1488.
  50    8.94   32.59     50   25.27  271.9   1.54    0.38  1484.
  75    8.31   32.80     75   25.59  241.5   2.20    0.79  1483.
 100    7.45   33.21     99   25.97  205.7   2.76    1.29  1480.
 125    7.66   33.62    124   26.26  178.8   3.24    1.84  1482.
 150    7.47   33.80    149   26.43  162.9   3.66    2.43  1482.
 175    7.31   33.86    174   26.50  156.7   4.06    3.09  1482.

DEEPEST MEASUREMENT:

 175    7.31   33.86    174   26.50  156.7   4.06    3.09  1482.
```



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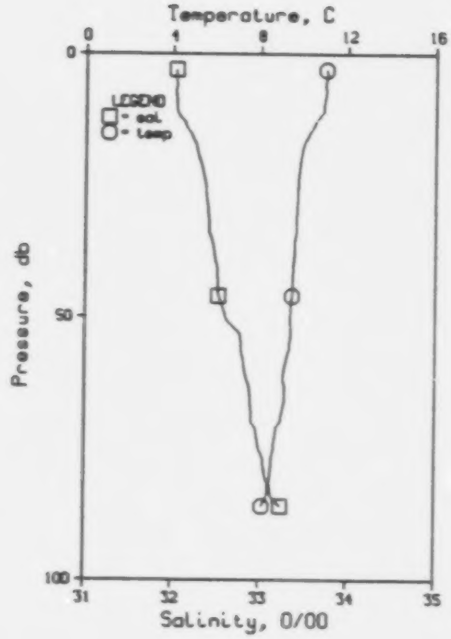
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-114        DATE 15/10/87
POSITION  48-55.2N, 126-18.0W   GMT 20:56    STATION MA18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
   0   11.14   32.03      0   24.46  347.7   0.00    0.00  1491.
  10   11.19   32.02     10   24.45  349.3   0.35    0.02  1491.
  20   10.98   32.02     20   24.49  345.9   0.69    0.07  1490.
  30   10.06   32.50     30   25.02  295.7   1.02    0.15  1488.
  50    9.02   32.65     50   25.30  268.8   1.58    0.38  1485.
  75    8.44   33.07     75   25.72  229.6   2.21    0.78  1483.
 100    7.75   33.42     99   26.09  194.6   2.73    1.24  1482.
 125    7.34   33.75    124   26.41  164.8   3.18    1.75  1481.

DEEPEST MEASUREMENT:

 136    7.33   33.75    135   26.41  164.7   3.36    2.00  1481.
```

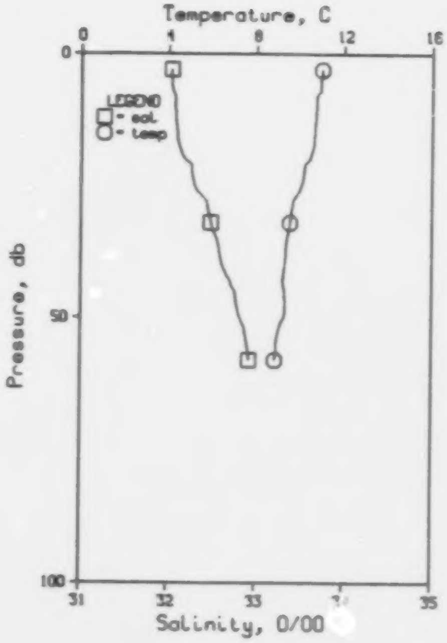


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-115          DATE 15/10/87
POSITION  49- 0.0N, 126-11.7W    GMT 21:39     STATION MA01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
   0   10.96   32.03     0    24.50  344.6   0.00    0.00  1490.
  10   10.87   32.03    10    24.52  343.0   0.34    0.02  1490.
  20    9.84   32.30    20    24.90  306.8   0.67    0.07  1487.
  30    9.65   32.41    30    25.01  296.4   0.97    0.14  1486.
  50    9.38   32.60    50    25.20  278.1   1.54    0.38  1486.
  75    8.65   32.98    75    25.62  238.7   2.18    0.78  1484.

DEEPEST MEASUREMENT:

  86    8.12   33.24    86    25.90  212.4   2.43    0.99  1482.
```



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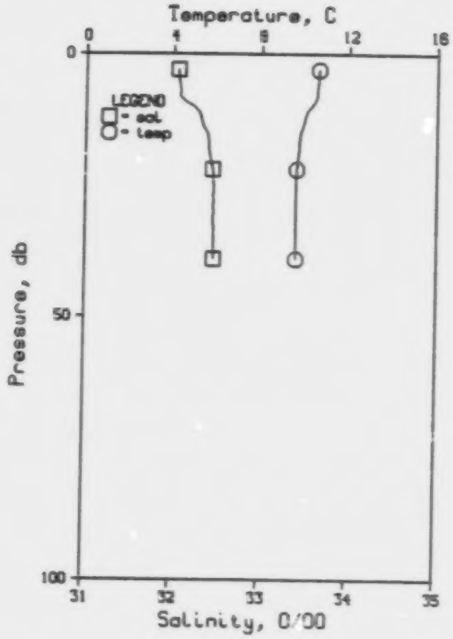
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-116          DATE 15/10/87
POSITION  49- 3.0N, 126- 5.9W    GMT 22:17     STATION MA08
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
   0   10.96   32.03     0    24.49  344.9   0.00    0.00  1490.
  10   10.73   32.07    10    24.57  338.1   0.34    0.02  1489.
  20   10.41   32.18    20    24.71  324.7   0.68    0.07  1489.
  30    9.59   32.46    30    25.06  291.4   0.98    0.15  1486.
  50    9.26   32.82    50    25.39  260.3   1.53    0.37  1486.

DEEPEST MEASUREMENT:

  58    8.88   32.92    58    25.54  246.7   1.74    0.48  1485.
```



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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-117          DATE 15/10/87
POSITION  49- 8.0N, 126- 0.2W   GMT 22:57     STATION MAOO
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
  0    10.60   32.05      0   24.57  337.5   0.00    0.00  1489.
 10    10.28   32.23     10   24.77  318.8   0.33    0.02  1488.
 20     9.66   32.43     20   25.02  294.9   0.64    0.06  1486.
 30     9.59   32.46     30   25.06  291.3   0.93    0.14  1486.

DEEPEST MEASUREMENT:

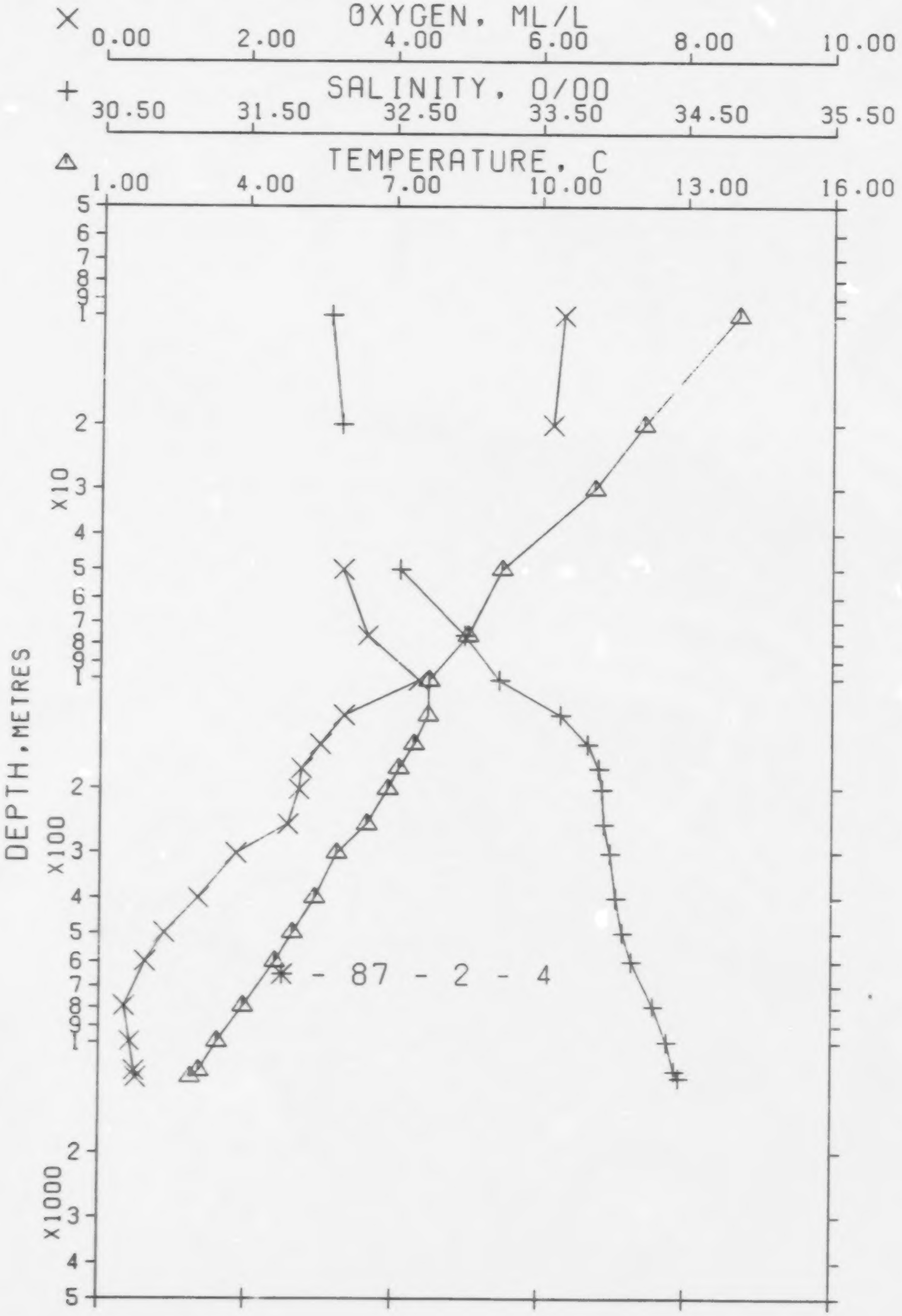
 39     9.58   32.46     39   25.06  291.2   1.19    0.23  1486.

PRES  DEPTH     TEMP    SAL          PRES  DEPTH      TEMP    SAL

  3.          10.603  32.046          22.             9.619  32.448
  4.          10.569  32.052          23.             9.604  32.456
  5.          10.562  32.053          24.             9.597  32.458
  6.          10.531  32.069          25.             9.592  32.462
  7.          10.509  32.079          26.             9.593  32.461
  8.          10.520  32.072          27.             9.591  32.460
  9.          10.443  32.131          28.             9.591  32.461
 10.          10.276  32.230          29.             9.593  32.460
 11.          10.050  32.289          30.             9.591  32.461
 12.           9.979  32.310          31.             9.591  32.460
 13.           9.936  32.325          32.             9.591  32.460
 14.           9.864  32.342          33.             9.588  32.461
 15.           9.771  32.381          34.             9.589  32.461
 16.           9.741  32.393          35.             9.588  32.461
 17.           9.725  32.403          36.             9.589  32.461
 18.           9.728  32.400          37.             9.587  32.462
 19.           9.703  32.409          38.             9.586  32.462
 20.           9.665  32.426          39.             9.586  32.463
 21.           9.639  32.438
```

Table 4

Hydrographic data taken during Cruise I.


× OXYGEN, ML/L
0.00
2.00
4.00
6.00
8.00
10.00
+ SALINITY, 0/00
30.50
31.50
32.50
33.50
34.50
35.50
△ TEMPERATURE, C
1.00
4.00
7.00
10.00
13.00
16.00
DEPTH, METRES
X10
X100
X1000
5
6
7
8
9
1
2
3
4
* - 87 - 2 - 4

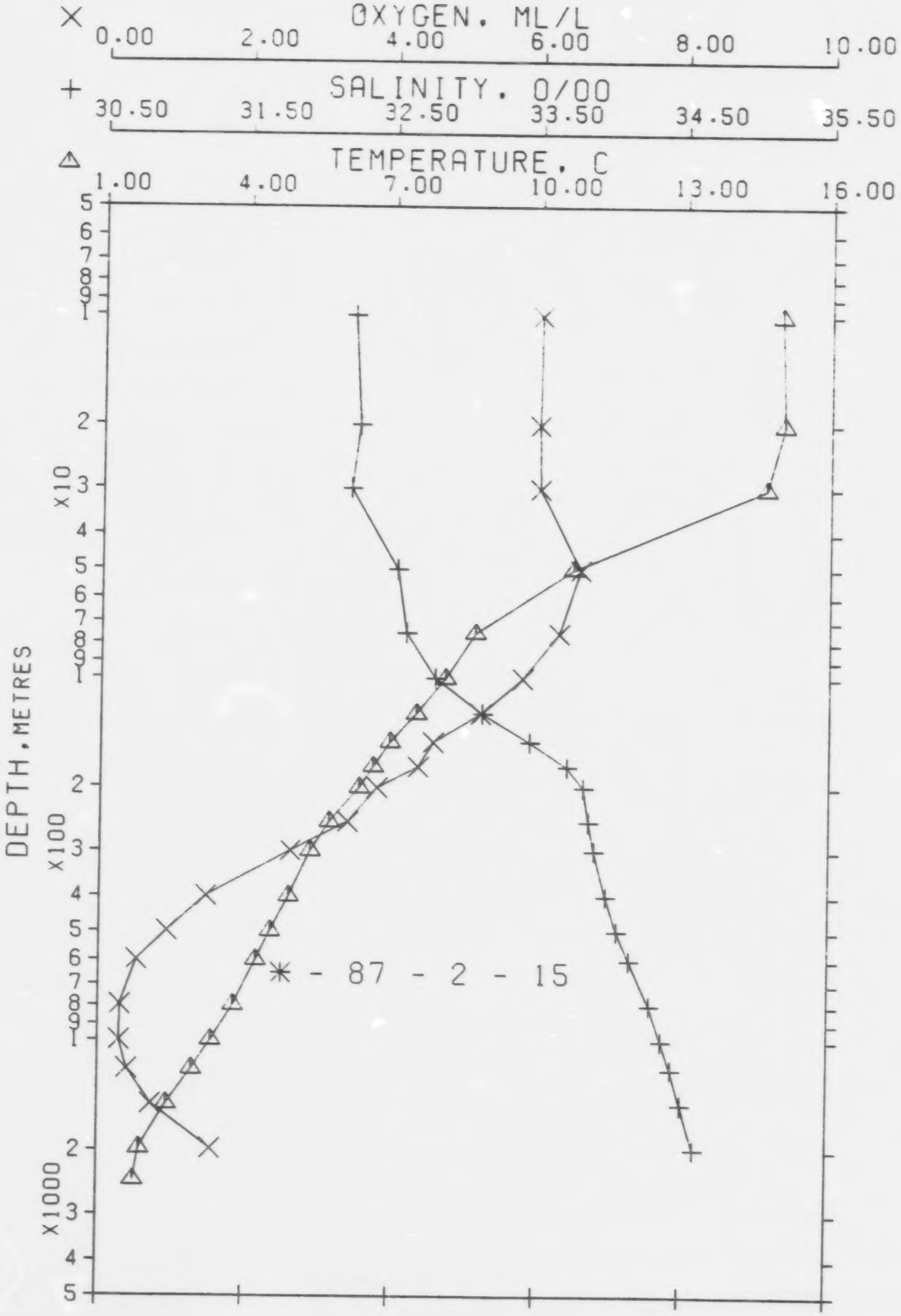
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 4 DATE 23/ 9/87 GMT 23: 0
POSITION 48-38.5 N 126-40.3 W STATION MP04
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	15.38	32.048	0	23.641	426.2	15.38	426.2	0.00	0.00	6.25	1505.
10	14.06	32.062	10	23.931	398.7	14.06	398.5	0.41	0.02	6.31	1501.
20	12.12	32.141	20	24.373	356.8	12.12	356.4	0.79	0.08	6.17	1495.
30	11.11	32.316	30	24.692	326.6	11.11	325.9	1.14	0.17	4.91	1491.
50	9.22	32.539	50	25.182	280.2	9.21	279.2	1.75	0.42	3.30	1485.
76	8.52	32.984	76	25.638	237.3	8.51	235.9	2.42	0.85	3.64	1484.
102	7.72	33.222	101	25.942	208.7	7.71	206.9	2.98	1.36	4.34	1481.
127	7.70	33.641	126	26.273	177.6	7.69	175.5	3.47	1.92	3.32	1482.
152	7.41	33.827	151	26.461	160.2	7.40	157.6	3.89	2.52	3.01	1482.
177	7.10	33.903	176	26.564	150.8	7.08	147.8	4.28	3.18	2.76	1481.
202	6.88	33.927	201	26.613	146.4	6.86	143.2	4.66	3.90	2.72	1480.
253	6.46	33.940	251	26.679	140.6	6.44	136.8	5.38	5.57	2.58	1480.
303	5.85	33.983	301	26.791	130.3	5.82	126.2	6.06	7.51	1.86	1478.
403	5.41	34.023	400	26.876	123.1	5.38	118.1	7.33	12.06	1.35	1478.
503	4.96	34.069	499	26.965	115.4	4.92	109.6	8.52	17.57	0.89	1478.
603	4.60	34.136	598	27.058	107.2	4.55	100.7	9.63	23.83	0.63	1478.
802	3.95	34.285	795	27.245	90.3	3.89	82.8	11.59	37.82	0.34	1479.
1003	3.42	34.380	994	27.374	78.8	3.35	70.6	13.29	53.40	0.43	1480.
1206	3.05	34.435	1194	27.452	71.9	2.96	63.1	14.82	70.56	0.49	1482.
1257	2.88	34.465	1244	27.491	68.0	2.79	59.4	15.17	75.03	0.51	1482.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	15.38	32.048	0	23.641	426.2	15.38	426.2	0.00	0.00	6.25	1505.
10	14.06	32.062	10	23.931	398.7	14.06	398.5	0.41	0.02	6.31	1501.
20	12.12	32.141	20	24.373	356.8	12.12	356.4	0.79	0.08	6.17	1495.
30	11.11	32.316	30	24.692	326.6	11.11	325.9	1.14	0.17	4.91	1491.
50	9.22	32.539	50	25.182	280.2	9.21	279.2	1.75	0.42	3.30	1485.
75	8.55	32.964	75	25.618	239.2	8.54	237.8	2.39	0.82	3.62	1484.
100	7.76	33.209	99	25.926	210.2	7.75	208.5	2.95	1.32	4.30	1481.
125	7.70	33.615	124	26.252	179.6	7.69	177.4	3.44	1.88	3.39	1482.
150	7.43	33.814	149	26.447	161.5	7.42	158.9	3.86	2.47	3.03	1482.
175	7.12	33.897	174	26.555	151.5	7.11	148.6	4.25	3.12	2.78	1481.
200	6.90	33.925	199	26.608	146.8	6.88	143.6	4.62	3.83	2.72	1480.
225	6.68	33.933	223	26.644	143.6	6.66	140.1	4.99	4.62	2.65	1480.
250	6.48	33.939	248	26.676	140.9	6.46	137.2	5.34	5.48	2.58	1480.
300	5.89	33.981	298	26.784	130.9	5.86	126.8	6.02	7.39	1.90	1478.
400	5.42	34.022	397	26.874	123.3	5.39	118.3	7.29	11.91	1.36	1478.
500	4.97	34.068	496	26.962	115.6	4.93	109.8	8.49	17.39	0.90	1478.
600	4.61	34.134	595	27.056	107.4	4.56	100.9	9.60	23.64	0.64	1478.
700	4.26	34.214	694	27.157	98.3	4.21	91.3	10.63	30.45	0.48	1478.
800	3.96	34.284	793	27.244	90.5	3.90	83.0	11.58	37.66	0.35	1479.
900	3.68	34.334	892	27.312	84.4	3.61	76.5	12.45	45.23	0.39	1479.
1000	3.43	34.379	991	27.372	79.0	3.36	70.8	13.26	53.13	0.43	1480.
1200	3.06	34.434	1188	27.450	72.1	2.97	63.3	14.77	70.04	0.49	1482.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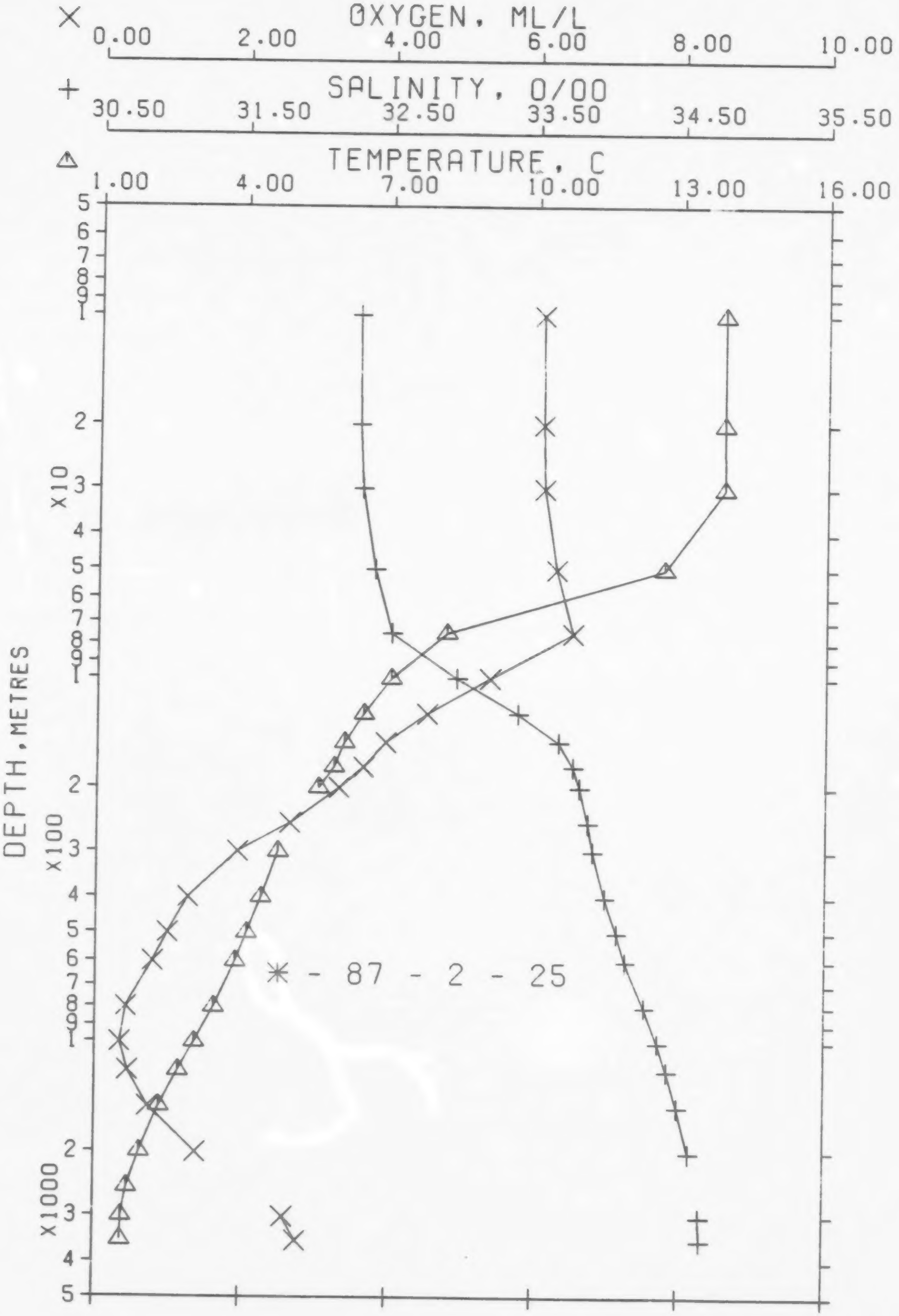
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 15 DATE 25/ 9/87 GMT 0:48
POSITION 48-44.5 N 127-40.1 W STATION MP06
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	14.93	32.217	0	23.868	404.5	14.93	404.5	0.00	0.00	6.01	1504.
10	14.97	32.223	10	23.864	405.2	14.97	404.9	0.41	0.02	6.01	1504.
20	15.03	32.261	20	23.880	403.9	15.03	403.3	0.81	0.08	5.99	1504.
30	14.67	32.203	30	23.912	401.1	14.67	400.2	1.22	0.19	6.00	1503.
50	10.71	32.528	50	24.927	304.7	10.70	303.6	1.93	0.48	6.57	1491.
75	8.68	32.591	75	25.307	268.7	8.67	267.4	2.65	0.94	6.28	1484.
101	8.08	32.789	100	25.551	245.8	8.07	244.1	3.30	1.51	5.78	1482.
126	7.49	33.114	125	25.890	213.9	7.48	211.8	3.88	2.18	5.21	1481.
151	6.96	33.442	150	26.221	182.8	6.95	180.4	4.38	2.88	4.56	1479.
176	6.62	33.704	175	26.472	159.2	6.60	156.5	4.81	3.60	4.36	1479.
201	6.34	33.818	200	26.599	147.4	6.32	144.5	5.19	4.34	3.81	1478.
251	5.73	33.855	249	26.705	137.7	5.71	134.4	5.89	5.95	3.40	1477.
301	5.34	33.895	299	26.783	130.7	5.32	127.0	6.57	7.85	2.62	1476.
402	4.90	33.977	399	26.899	120.5	4.87	115.9	7.83	12.39	1.47	1476.
502	4.52	34.052	498	27.000	111.5	4.48	106.2	8.99	17.72	0.94	1476.
603	4.23	34.139	598	27.100	102.7	4.18	96.7	10.07	23.81	0.53	1477.
804	3.78	34.283	797	27.261	88.6	3.72	81.4	11.99	37.51	0.31	1478.
1004	3.33	34.368	995	27.373	78.7	3.26	70.7	13.66	52.88	0.30	1480.
1205	2.94	34.432	1193	27.460	70.8	2.86	62.4	15.16	69.74	0.41	1481.
1505	2.43	34.504	1489	27.562	61.4	2.33	52.6	17.14	97.11	0.74	1484.
2003	1.88	34.592	1979	27.676	50.6	1.74	41.6	19.94	146.94	0.00	1490.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	14.93	32.217	0	23.868	404.5	14.93	404.5	0.00	0.00	6.01	1504.
10	14.97	32.223	10	23.864	405.2	14.97	404.9	0.41	0.02	6.01	1504.
20	15.03	32.261	20	23.880	403.9	15.03	403.3	0.81	0.08	5.99	1504.
30	14.67	32.203	30	23.912	401.1	14.67	400.2	1.22	0.19	6.00	1503.
50	10.71	32.528	50	24.927	304.7	10.70	303.6	1.93	0.48	6.57	1491.
75	8.68	32.591	75	25.307	268.7	8.67	267.4	2.65	0.94	6.28	1484.
100	8.09	32.785	99	25.546	246.2	8.08	244.5	3.29	1.50	5.79	1482.
125	7.50	33.106	124	25.882	214.7	7.49	212.7	3.86	2.16	5.23	1481.
150	6.98	33.431	149	26.210	183.7	6.96	181.4	4.36	2.86	4.58	1479.
175	6.63	33.694	174	26.462	160.1	6.62	157.5	4.79	3.57	4.37	1479.
200	6.35	33.813	199	26.593	148.0	6.34	145.1	5.17	4.30	3.84	1478.
225	6.03	33.837	224	26.653	142.5	6.01	139.4	5.53	5.08	3.60	1477.
250	5.74	33.855	248	26.703	137.9	5.72	134.6	5.88	5.93	3.41	1477.
300	5.35	33.894	298	26.782	130.8	5.32	127.1	6.55	7.81	2.63	1476.
400	4.91	33.976	397	26.897	120.6	4.88	116.1	7.81	12.29	1.49	1476.
500	4.53	34.051	496	26.999	111.7	4.49	106.4	8.97	17.61	0.95	1476.
600	4.24	34.137	595	27.098	102.9	4.19	97.0	10.04	23.63	0.54	1476.
700	4.00	34.214	694	27.184	95.3	3.94	88.7	11.03	30.18	0.41	1477.
800	3.79	34.280	793	27.258	88.8	3.73	81.6	11.95	37.21	0.31	1478.
900	3.55	34.326	892	27.318	83.5	3.49	75.9	12.81	44.67	0.30	1479.
1000	3.34	34.366	991	27.370	78.9	3.27	70.9	13.62	52.53	0.30	1480.
1200	2.95	34.431	1188	27.458	71.0	2.86	62.6	15.12	69.31	0.41	1481.
1500	2.44	34.503	1484	27.560	61.5	2.33	52.8	17.11	96.63	0.73	1484.
2000	1.88	34.592	1976	27.676	50.7	1.75	41.7	19.93	146.64	1.56	1490.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OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 25 DATE 26/ 9/87 GMT 17:48
POSITION 49-17.0 N 134-40.0 W STATION MP16
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	13.83	32.270	0	24.138	378.8	13.83	378.8	0.00	0.00	6.07	1500.
10	13.86	32.278	10	24.138	379.0	13.86	378.7	0.38	0.02	6.08	1501.
20	13.86	32.285	20	24.144	378.7	13.86	378.2	0.76	0.08	6.09	1501.
30	13.87	32.306	30	24.158	377.6	13.87	376.8	1.14	0.18	6.11	1501.
50	12.65	32.395	50	24.468	348.4	12.64	347.2	1.87	0.47	6.28	1497.
75	8.18	32.516	75	25.323	267.1	8.17	265.8	2.65	0.97	6.52	1482.
101	7.04	32.963	100	25.834	218.7	7.03	217.2	3.26	1.51	5.38	1478.
126	6.47	33.383	125	26.239	180.5	6.46	178.7	3.76	2.09	4.52	1477.
151	6.07	33.663	150	26.511	155.0	6.06	152.9	4.18	2.68	3.95	1476.
176	5.86	33.764	175	26.617	145.2	5.85	142.8	4.56	3.31	3.65	1476.
201	5.55	33.809	200	26.690	138.4	5.53	135.9	4.91	3.99	3.32	1475.
252	5.10	33.869	250	26.791	129.2	5.08	126.3	5.59	5.55	2.64	1474.
302	4.73	33.906	300	26.862	122.8	4.71	119.5	6.22	7.34	1.94	1473.
404	4.39	33.990	401	26.965	113.7	4.36	109.7	7.42	11.66	1.26	1474.
506	4.10	34.072	502	27.061	105.3	4.06	100.5	8.54	16.83	0.99	1474.
607	3.87	34.135	602	27.134	99.0	3.83	93.5	9.57	22.68	0.79	1475.
811	3.44	34.267	804	27.282	86.0	3.38	79.4	11.45	36.25	0.42	1477.
1014	3.05	34.361	1004	27.393	76.1	2.98	68.8	13.09	51.44	0.35	1479.
1214	2.72	34.426	1202	27.475	68.9	2.64	61.0	14.54	67.93	0.46	1481.
1522	2.33	34.498	1505	27.565	60.7	2.23	52.3	16.53	95.66	0.73	1484.
2036	1.94	34.577	2011	27.660	52.5	1.80	43.1	19.45	148.46	1.40	1491.
2548	1.69	34.618	2514	27.711	48.2	1.51	38.0	22.03	208.68	2.06	1499.
3057	1.58	34.651	3013	27.746	45.9	1.35	34.4	24.43	277.25	2.59	1507.
3561	1.57	34.658	3505	27.752	46.6	1.29	33.5	26.76	355.81	2.77	1515.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	13.83	32.270	0	24.138	378.8	13.83	378.8	0.00	0.00	6.07	1500.
10	13.86	32.278	10	24.138	379.0	13.86	378.7	0.38	0.02	6.08	1501.
20	13.86	32.285	20	24.144	378.7	13.86	378.2	0.76	0.08	6.09	1501.
30	13.87	32.306	30	24.158	377.6	13.87	376.8	1.14	0.18	6.11	1501.
50	12.65	32.395	50	24.468	348.4	12.64	347.2	1.87	0.47	6.28	1497.
75	8.18	32.516	75	25.323	267.1	8.17	265.8	2.65	0.97	6.52	1482.
100	7.06	32.955	99	25.824	219.6	7.05	218.2	3.25	1.50	5.40	1478.
125	6.48	33.372	124	26.229	181.5	6.47	179.7	3.75	2.07	4.55	1477.
150	6.08	33.654	149	26.502	155.8	6.07	153.8	4.17	2.66	3.97	1476.
175	5.87	33.760	174	26.613	145.6	5.85	143.2	4.54	3.28	3.66	1476.
200	5.57	33.807	199	26.687	138.7	5.55	136.2	4.90	3.96	3.33	1475.
225	5.33	33.839	224	26.741	133.8	5.31	131.1	5.24	4.69	2.98	1474.
250	5.11	33.867	248	26.788	129.5	5.09	126.6	5.56	5.49	2.66	1474.
300	4.74	33.905	298	26.859	123.1	4.72	119.8	6.20	7.26	1.97	1473.
400	4.40	33.987	397	26.962	114.0	4.37	110.0	7.38	11.47	1.29	1474.
500	4.12	34.068	496	27.056	105.8	4.08	101.0	8.47	16.51	1.00	1474.
600	3.88	34.131	595	27.130	99.4	3.84	94.0	9.50	22.25	0.80	1475.
700	3.66	34.200	694	27.207	92.6	3.61	86.6	10.46	28.62	0.61	1476.
800	3.46	34.261	793	27.275	86.6	3.40	80.1	11.36	35.45	0.44	1477.
900	3.26	34.311	892	27.334	81.4	3.19	74.5	12.20	42.73	0.39	1478.
1000	3.07	34.355	991	27.386	76.7	3.00	69.4	12.98	50.37	0.35	1478.
1200	2.74	34.422	1188	27.469	69.3	2.66	61.5	14.44	66.72	0.45	1480.
1500	2.35	34.493	1484	27.560	61.2	2.25	52.9	16.40	93.64	0.72	1484.
2000	1.96	34.572	1976	27.654	53.0	1.83	43.7	19.27	144.59	1.36	1491.
2500	1.71	34.614	2467	27.707	48.6	1.53	38.4	21.80	202.71	2.00	1498.
3000	1.59	34.648	2957	27.743	46.1	1.37	34.8	24.17	269.11	2.53	1506.
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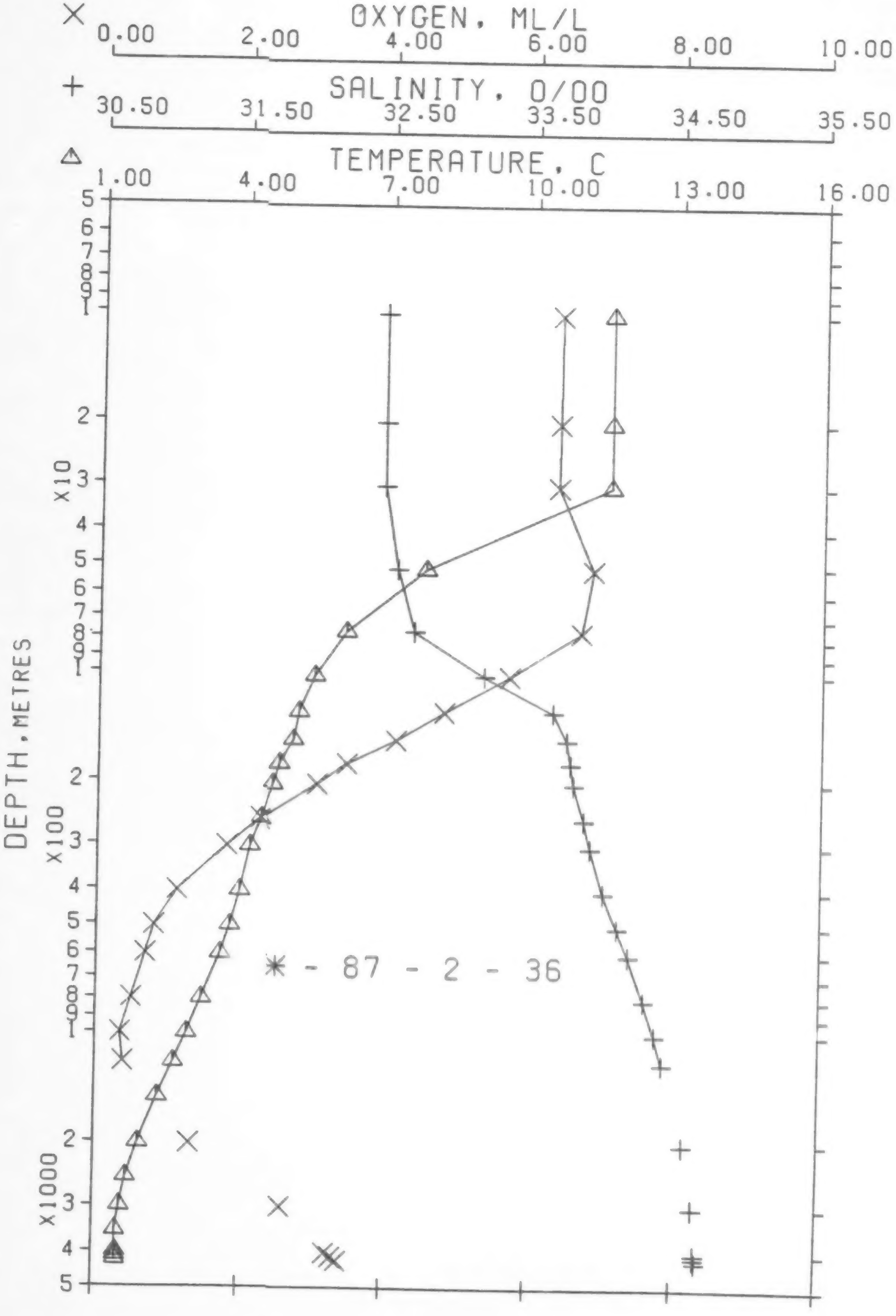
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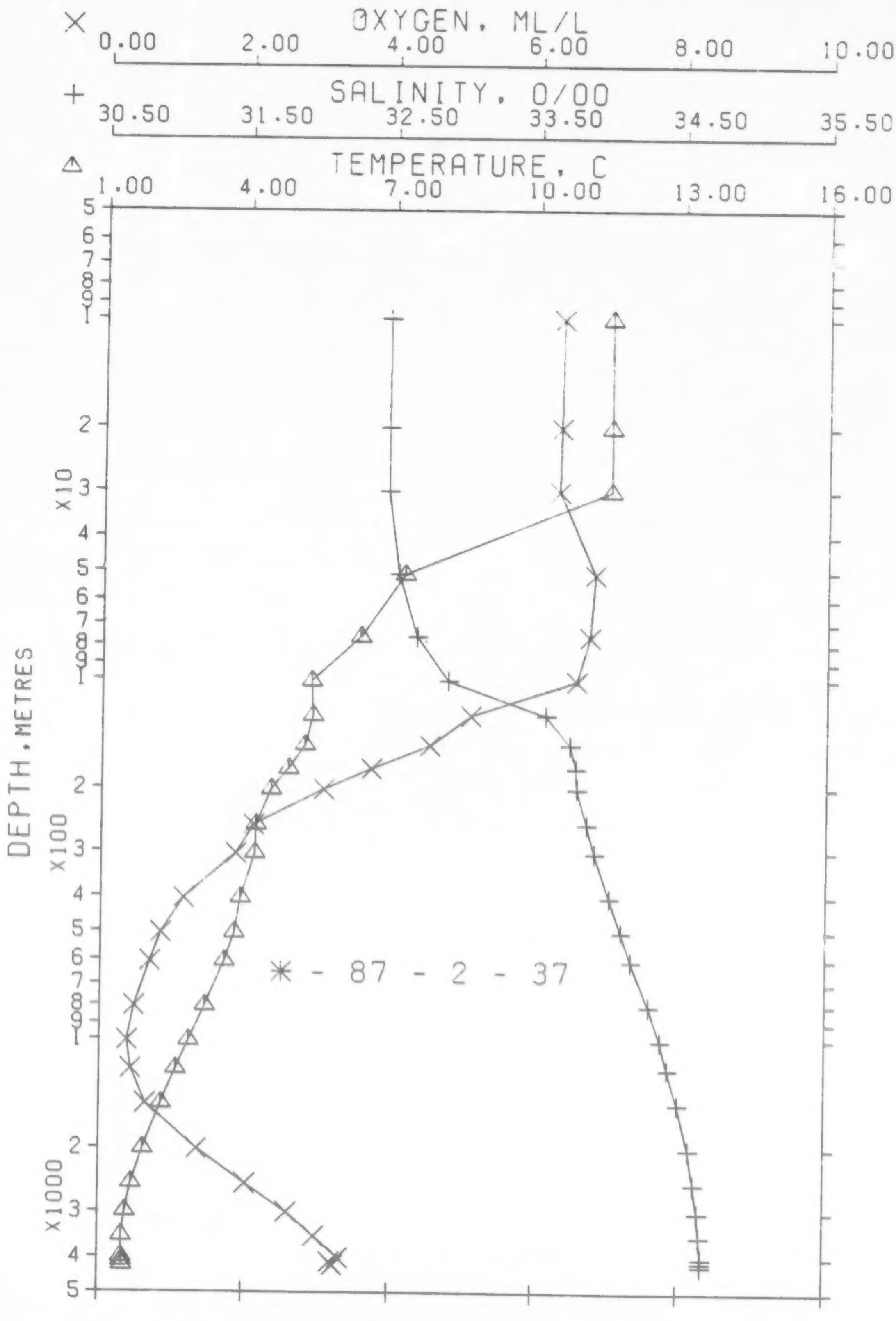
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 36 DATE 29/ 9/87 GMT 4:18
POSITION 50- 0.0 N 145- 0.0 W STATION MP26
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.58	32.458	0	24.718	323.5	11.58	323.5	0.00	0.00	6.34	1493.
10	11.58	32.460	10	24.719	323.6	11.58	323.4	0.33	0.02	6.34	1493.
20	11.58	32.459	20	24.718	323.9	11.58	323.4	0.65	0.07	6.34	1493.
30	11.58	32.460	30	24.719	324.0	11.58	323.3	0.98	0.15	6.33	1493.
51	7.76	32.554	51	25.413	258.1	7.76	257.3	1.59	0.40	6.82	1480.
76	6.12	32.676	76	25.728	228.3	6.11	227.4	2.20	0.80	6.66	1474.
102	5.48	33.168	101	26.193	184.4	5.47	183.2	2.72	1.27	5.69	1472.
128	5.16	33.642	127	26.604	145.6	5.15	144.1	3.15	1.77	4.79	1472.
153	5.05	33.741	152	26.695	137.2	5.04	135.5	3.50	2.27	4.12	1472.
178	4.77	33.768	177	26.748	132.3	4.76	130.4	3.84	2.84	3.44	1471.
203	4.64	33.790	202	26.780	129.5	4.62	127.4	4.17	3.48	3.04	1471.
255	4.40	33.862	253	26.863	122.0	4.38	119.5	4.82	4.99	2.26	1471.
305	4.17	33.910	303	26.925	116.4	4.15	113.6	5.42	6.71	1.80	1471.
406	3.97	34.004	403	27.020	108.2	3.94	104.5	6.55	10.81	1.12	1472.
507	3.77	34.104	503	27.120	99.4	3.73	95.0	7.60	15.68	0.81	1473.
608	3.58	34.185	603	27.203	92.1	3.54	87.0	8.56	21.17	0.70	1474.
809	3.20	34.296	802	27.328	81.2	3.14	75.1	10.30	33.70	0.51	1476.
1011	2.91	34.372	1001	27.415	73.7	2.84	66.8	11.86	48.13	0.36	1478.
1213	2.64	34.428	1201	27.483	67.8	2.56	60.2	13.29	64.35	0.40	1480.
1518	2.32	34.491	1501	27.561	61.1	2.22	52.7	15.25	91.63	0.80	1484.
2032	1.94	34.574	2007	27.657	52.7	1.80	43.4	18.19	144.60	1.33	1491.
2532	1.70	34.613	2498	27.707	48.6	1.52	38.5	20.72	203.48	2.03	1498.
3045	1.58	34.645	3001	27.741	46.2	1.35	34.9	23.16	272.89	2.61	1507.
3561	1.50	34.655	3505	27.755	45.8	1.22	33.3	25.54	352.90	2.95	1515.
4079	1.51	34.663	4010	27.761	46.6	1.18	32.4	27.93	445.86	3.24	1524.
4184	1.51	34.664	4112	27.762	46.8	1.17	32.2	28.42	466.49	3.33	1526.
4287	1.51	34.672	4213	27.768	46.5	1.15	31.5	28.90	487.39	0.00	1528.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.58	32.458	0	24.718	323.5	11.58	323.5	0.00	0.00	6.34	1493.
10	11.58	32.460	10	24.719	323.6	11.58	323.4	0.33	0.02	6.34	1493.
20	11.58	32.459	20	24.718	323.9	11.58	323.4	0.65	0.07	6.34	1493.
30	11.58	32.460	30	24.719	324.0	11.58	323.3	0.98	0.15	6.33	1493.
50	7.94	32.549	50	25.383	260.9	7.94	260.1	1.56	0.39	6.79	1480.
75	6.20	32.670	75	25.713	229.7	6.19	228.8	2.17	0.77	6.67	1474.
100	5.52	33.140	99	26.167	186.8	5.51	185.7	2.69	1.24	5.74	1472.
125	5.19	33.596	124	26.564	149.3	5.18	147.9	3.11	1.72	4.87	1472.
150	5.06	33.730	149	26.685	138.1	5.05	136.4	3.46	2.21	4.19	1472.
175	4.80	33.765	174	26.742	132.9	4.79	131.0	3.80	2.77	3.52	1471.
200	4.66	33.787	199	26.776	129.9	4.64	127.8	4.13	3.39	3.09	1471.
225	4.53	33.822	223	26.817	126.2	4.52	123.9	4.45	4.09	2.69	1471.
250	4.42	33.856	248	26.856	122.7	4.40	120.2	4.76	4.84	2.33	1471.
300	4.19	33.905	298	26.919	117.0	4.17	114.1	5.36	6.52	1.85	1471.
400	3.98	33.999	397	27.015	108.6	3.95	105.0	6.48	10.53	1.16	1472.
500	3.78	34.098	496	27.114	99.9	3.75	95.6	7.53	15.32	0.83	1473.
600	3.59	34.179	595	27.197	92.7	3.55	87.6	8.49	20.71	0.70	1474.
700	3.39	34.240	694	27.264	86.7	3.34	81.2	9.38	26.64	0.60	1475.
800	3.22	34.291	793	27.323	81.7	3.16	75.6	10.23	33.07	0.51	1476.
900	3.06	34.332	892	27.369	77.6	3.00	71.1	11.02	39.96	0.44	1477.
1000	2.92	34.368	990	27.410	74.1	2.86	67.2	11.78	47.31	0.37	1478.
1200	2.66	34.425	1188	27.479	68.2	2.57	60.6	13.20	63.23	0.40	1480.
1500	2.34	34.488	1484	27.557	61.4	2.24	53.1	15.15	89.97	0.78	1484.
2000	1.96	34.570	1976	27.652	53.2	1.82	43.9	18.02	141.14	1.30	1491.
2500	1.71	34.610	2467	27.704	48.9	1.54	38.8	20.56	199.48	1.99	1498.
3000	1.59	34.642	2957	27.738	46.4	1.37	35.2	22.95	266.40	2.57	1506.
3500	1.51	34.654	3445	27.753	45.8	1.24	33.5	25.26	342.84	2.91	1514.
4000	1.51	34.662	3933	27.760	46.5	1.19	32.5	27.56	430.75	3.20	1523.
4100	1.51	34.663	4031	27.761	46.7	1.18	32.3	28.02	449.98	3.26	1524.
4200	1.51	34.665	4128	27.763	46.8	1.16	32.1	28.49	469.78	3.34	1526.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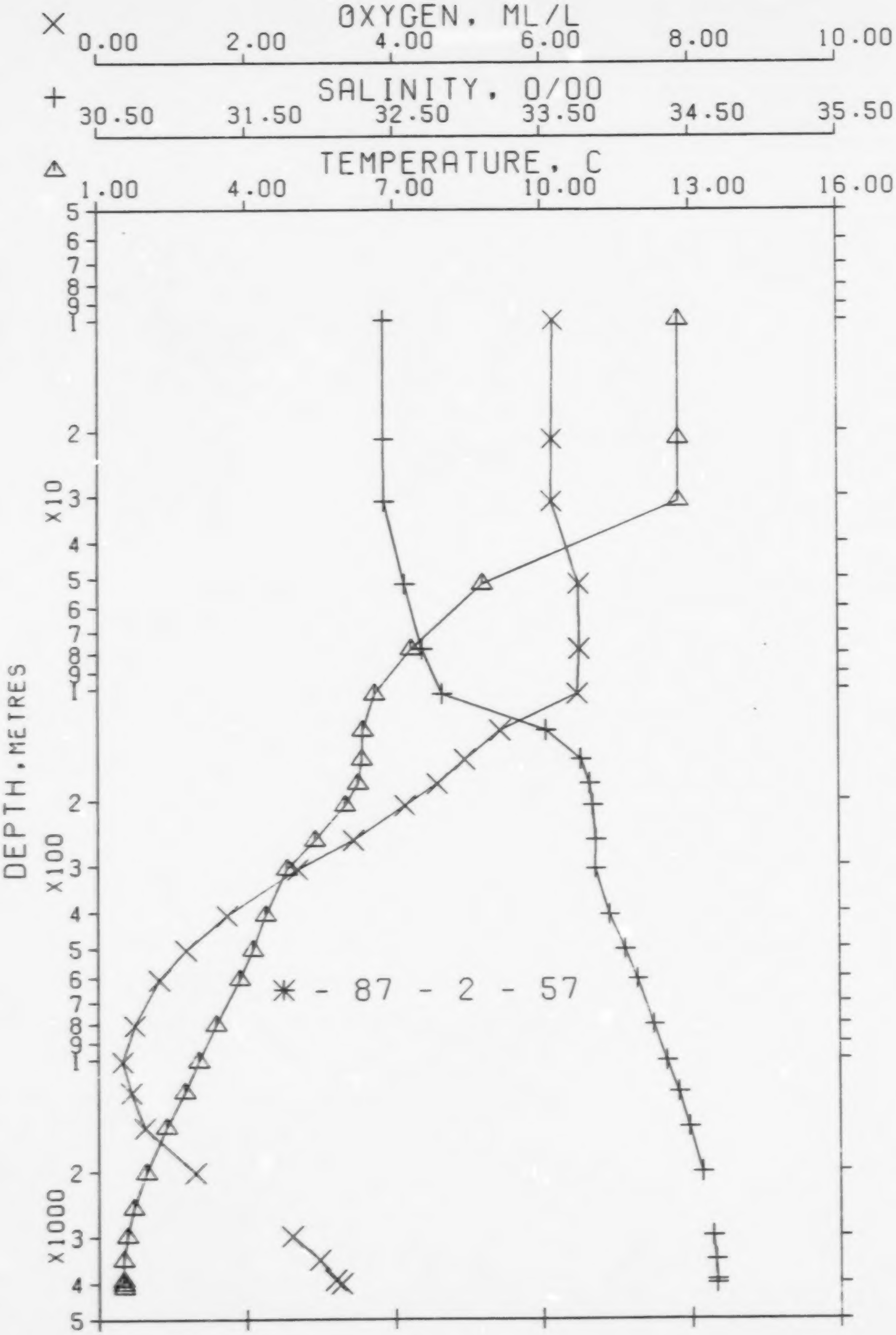
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 37 DATE 29/ 9/87 GMT 9:18
POSITION 50- 0.0 N 145- 0.0 W STATION MP26
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.49	32.470	0	24.743	321.1	11.49	321.1	0.00	0.00	6.31	1493.
10	11.50	32.462	10	24.735	322.1	11.50	321.8	0.32	0.02	6.34	1493.
20	11.50	32.460	20	24.734	322.4	11.50	322.0	0.65	0.07	6.31	1493.
30	11.50	32.460	30	24.734	322.7	11.50	322.0	0.98	0.15	6.29	1493.
51	7.23	32.534	51	25.471	252.5	7.23	251.7	1.58	0.40	6.79	1478.
76	6.33	32.659	76	25.688	232.1	6.32	231.2	2.19	0.79	6.72	1475.
102	5.33	32.881	101	25.984	204.1	5.32	203.0	2.74	1.29	6.54	1471.
127	5.36	33.563	126	26.519	153.7	5.35	152.2	3.19	1.81	5.08	1473.
153	5.20	33.730	152	26.669	139.7	5.19	137.9	3.57	2.36	4.51	1473.
178	4.87	33.774	177	26.742	133.0	4.86	131.0	3.91	2.93	3.71	1472.
203	4.52	33.780	202	26.785	129.0	4.50	126.9	4.24	3.57	3.06	1471.
255	4.21	33.850	253	26.873	120.9	4.19	118.5	4.88	5.07	2.11	1470.
306	4.19	33.903	304	26.918	117.2	4.17	114.3	5.49	6.82	1.87	1471.
408	3.90	34.010	405	27.032	107.0	3.87	103.3	6.64	10.98	1.15	1472.
510	3.78	34.092	506	27.109	100.4	3.74	96.0	7.69	15.92	0.84	1473.
612	3.58	34.166	607	27.188	93.6	3.54	88.5	8.68	21.58	0.70	1474.
815	3.19	34.290	808	27.324	81.6	3.13	75.5	10.46	34.45	0.48	1476.
1018	2.86	34.372	1008	27.419	73.3	2.79	66.4	12.02	49.04	0.39	1478.
1220	2.60	34.424	1208	27.483	67.7	2.52	60.2	13.44	65.27	0.44	1480.
1525	2.30	34.497	1508	27.567	60.5	2.20	52.2	15.39	92.54	0.65	1484.
2032	1.93	34.573	2007	27.657	52.7	1.79	43.4	18.27	144.60	1.37	1491.
2541	1.69	34.611	2507	27.706	48.7	1.51	38.5	20.85	204.66	2.03	1499.
3052	1.57	34.641	3007	27.739	46.4	1.34	35.1	23.28	273.96	2.61	1507.
3566	1.50	34.656	3510	27.756	45.7	1.22	33.2	25.66	354.03	2.99	1515.
4086	1.50	34.668	4017	27.766	46.2	1.17	31.9	28.05	447.34	3.32	1524.
4191	1.51	34.666	4119	27.763	46.7	1.17	32.1	28.53	467.86	3.21	1526.
4295	1.52	34.667	4221	27.763	47.0	1.16	32.0	29.03	489.10	3.24	1528.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.49	32.470	0	24.743	321.1	11.49	321.1	0.00	0.00	6.31	1493.
10	11.50	32.462	10	24.735	322.1	11.50	321.8	0.32	0.02	6.34	1493.
20	11.50	32.460	20	24.734	322.4	11.50	322.0	0.65	0.07	6.31	1493.
30	11.50	32.460	30	24.734	322.7	11.50	322.0	0.98	0.15	6.29	1493.
50	7.44	32.530	50	25.440	255.5	7.43	254.7	1.55	0.38	6.76	1478.
75	6.37	32.653	75	25.678	233.1	6.37	232.1	2.15	0.77	6.72	1475.
100	5.39	32.868	99	25.967	205.7	5.38	204.6	2.70	1.26	6.55	1471.
125	5.36	33.519	124	26.484	157.0	5.35	155.5	3.16	1.78	5.17	1473.
150	5.22	33.712	149	26.653	141.2	5.20	139.4	3.53	2.29	4.57	1473.
175	4.91	33.769	174	26.733	133.8	4.90	131.8	3.87	2.86	3.81	1472.
200	4.56	33.779	199	26.780	129.5	4.55	127.4	4.20	3.48	3.15	1471.
225	4.38	33.811	223	26.825	125.4	4.36	123.1	4.51	4.17	2.64	1471.
250	4.24	33.844	248	26.866	121.6	4.22	119.2	4.82	4.92	2.19	1470.
300	4.19	33.897	298	26.913	117.6	4.17	114.8	5.42	6.59	1.90	1471.
400	3.92	34.002	397	27.024	107.7	3.89	104.1	6.55	10.61	1.20	1472.
500	3.79	34.085	496	27.102	101.0	3.76	96.6	7.59	15.39	0.87	1473.
600	3.60	34.158	595	27.179	94.3	3.56	89.3	8.57	20.87	0.71	1474.
700	3.40	34.224	694	27.252	87.9	3.35	82.4	9.48	26.90	0.59	1475.
800	3.22	34.282	793	27.315	82.4	3.16	76.4	10.33	33.41	0.49	1476.
900	3.04	34.326	892	27.366	77.9	2.98	71.4	11.13	40.34	0.44	1477.
1000	2.89	34.365	990	27.412	73.9	2.82	67.1	11.89	47.69	0.40	1478.
1200	2.62	34.419	1188	27.477	68.2	2.54	60.8	13.30	63.55	0.43	1480.
1500	2.32	34.492	1484	27.561	61.0	2.22	52.8	15.24	90.22	0.64	1484.
2000	1.95	34.569	1976	27.652	53.1	1.81	43.9	18.11	141.14	1.33	1491.
2500	1.71	34.608	2467	27.702	49.0	1.53	38.9	20.65	199.50	1.99	1498.
3000	1.58	34.638	2957	27.736	46.6	1.36	35.5	23.04	266.56	2.56	1506.
3500	1.51	34.654	3445	27.754	45.8	1.24	33.4	25.35	343.13	2.94	1514.
4000	1.50	34.666	3933	27.764	46.1	1.18	32.1	27.65	431.01	3.27	1523.
4100	1.50	34.668	4031	27.765	46.2	1.17	31.9	28.11	450.04	3.30	1524.
4200	1.51	34.666	4128	27.763	46.7	1.17	32.1	28.58	469.72	3.21	1526.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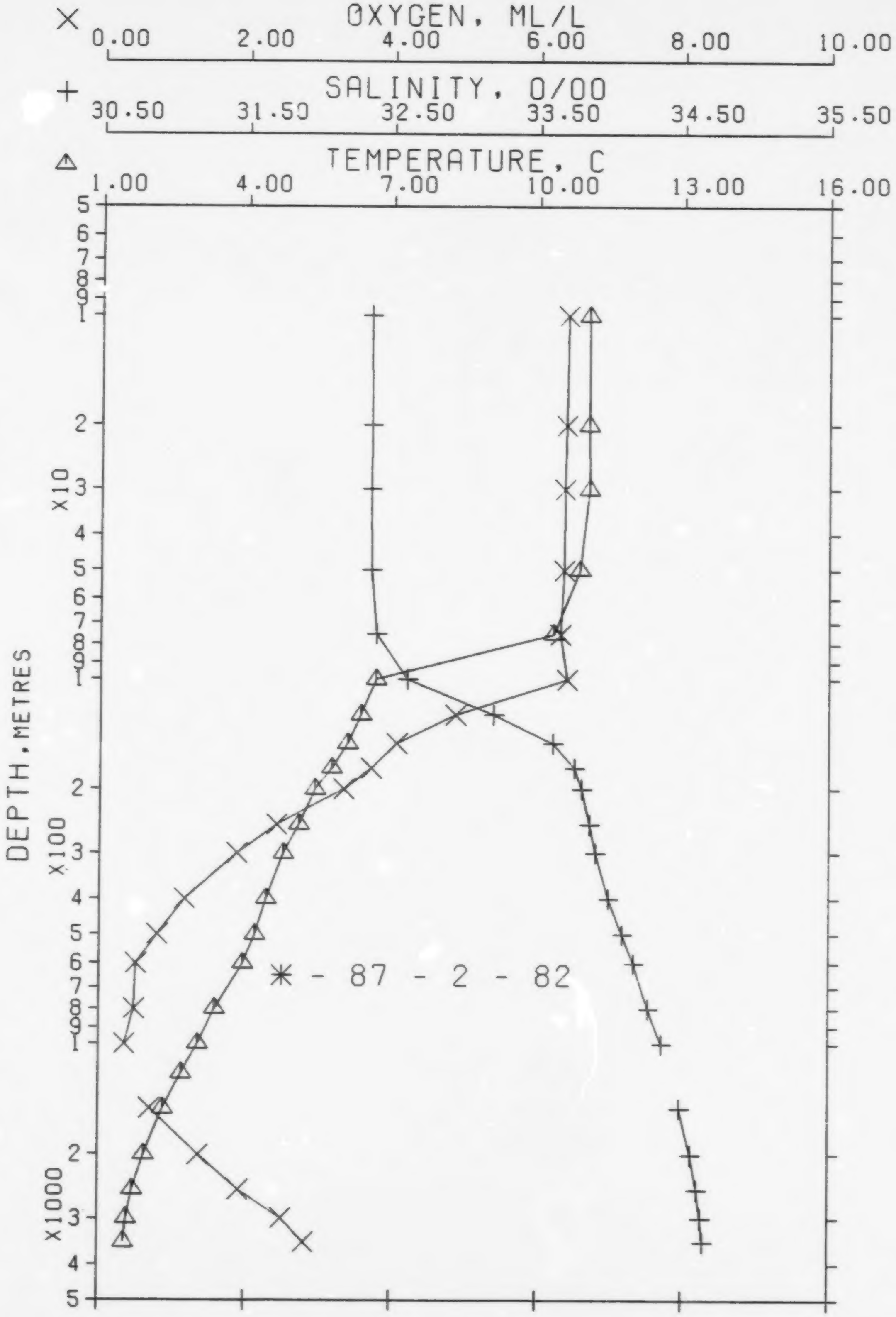
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 57 DATE 4/10/87 GMT 2:36
POSITION 48- 1.9 N 140-55.3 W STATION OS08
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	12.76	32.432	0	24.476	346.6	12.76	346.6	0.00	0.00	6.16	1497.
10	12.77	32.433	10	24.475	346.9	12.77	346.7	0.35	0.02	6.17	1497.
21	12.77	32.434	21	24.475	347.1	12.77	346.6	0.73	0.08	6.15	1497.
31	12.77	32.437	31	24.478	347.1	12.77	346.3	1.08	0.17	6.14	1497.
52	8.80	32.576	52	25.277	271.2	8.79	270.3	1.73	0.45	6.50	1484.
78	7.35	32.690	78	25.577	242.8	7.34	241.6	2.40	0.89	6.52	1479.
104	6.60	32.825	103	25.784	223.4	6.59	222.0	2.99	1.43	6.48	1476.
130	6.36	33.527	129	26.367	168.4	6.35	166.6	3.50	2.04	5.44	1477.
156	6.34	33.764	155	26.556	150.9	6.33	148.6	3.92	2.65	4.95	1477.
181	6.26	33.823	180	26.613	145.8	6.24	143.2	4.29	3.29	4.58	1478.
207	6.00	33.846	206	26.664	141.2	5.98	138.3	4.66	4.03	4.15	1477.
258	5.39	33.866	256	26.754	132.9	5.37	129.7	5.35	5.66	3.44	1475.
308	4.82	33.859	306	26.815	127.4	4.80	124.0	6.01	7.56	2.70	1474.
410	4.39	33.953	407	26.936	116.5	4.36	112.4	7.25	12.10	1.74	1474.
510	4.13	34.058	506	27.047	106.7	4.09	101.9	8.37	17.32	1.19	1474.
611	3.86	34.141	606	27.140	98.4	3.82	93.0	9.40	23.23	0.83	1475.
813	3.38	34.248	806	27.272	86.8	3.32	80.3	11.27	36.74	0.50	1477.
1019	3.03	34.335	1009	27.374	77.9	2.96	70.6	12.95	52.46	0.33	1479.
1233	2.75	34.412	1221	27.461	70.3	2.66	62.3	14.54	70.69	0.44	1481.
1538	2.38	34.486	1521	27.551	62.3	2.27	53.6	16.56	99.12	0.63	1485.
2039	1.97	34.569	2014	27.651	53.5	1.83	44.0	19.46	151.84	1.30	1491.
2539	1.71	34.609	2505	27.703	49.1	1.53	38.8	22.00	211.12	2.02	1499.
3029	1.58	34.641	2986	27.738	46.5	1.36	35.2	24.35	277.82	2.60	1506.
3515	1.50	34.657	3461	27.757	45.5	1.23	33.2	26.59	352.53	2.98	1514.
3994	1.50	34.663	3928	27.762	46.3	1.18	32.4	28.79	436.75	3.18	1523.
4088	1.50	34.663	4020	27.762	46.5	1.17	32.3	29.23	454.79	3.26	1524.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	12.76	32.432	0	24.476	346.6	12.76	346.6	0.00	0.00	6.16	1497.
10	12.77	32.433	10	24.475	346.9	12.77	346.7	0.35	0.02	6.17	1497.
20	12.77	32.434	20	24.475	347.1	12.77	346.6	0.69	0.07	6.15	1497.
30	12.77	32.437	30	24.477	347.1	12.77	346.4	1.04	0.16	6.14	1497.
50	9.14	32.564	50	25.214	277.2	9.14	276.2	1.67	0.41	6.47	1485.
75	7.51	32.677	75	25.545	245.9	7.50	244.7	2.32	0.82	6.52	1479.
100	6.70	32.808	99	25.758	225.9	6.69	224.5	2.91	1.35	6.49	1477.
125	6.40	33.410	124	26.270	177.6	6.39	175.8	3.42	1.93	5.61	1477.
150	6.34	33.714	149	26.516	154.6	6.33	152.4	3.83	2.50	5.06	1477.
175	6.28	33.809	174	26.600	147.0	6.26	144.5	4.20	3.12	4.67	1477.
200	6.07	33.840	199	26.650	142.4	6.05	139.6	4.56	3.81	4.26	1477.
225	5.77	33.854	223	26.698	138.0	5.75	135.1	4.91	4.57	3.88	1476.
250	5.48	33.863	248	26.742	134.1	5.46	130.9	5.25	5.40	3.54	1476.
300	4.91	33.860	298	26.806	128.2	4.88	124.8	5.90	7.23	2.81	1474.
400	4.43	33.945	397	26.925	117.5	4.40	113.4	7.13	11.61	1.82	1474.
500	4.15	34.048	496	27.037	107.6	4.12	102.8	8.26	16.77	1.24	1474.
600	3.89	34.133	595	27.131	99.3	3.84	93.9	9.29	22.56	0.87	1475.
700	3.63	34.192	694	27.203	92.9	3.58	86.9	10.25	28.92	0.67	1476.
800	3.41	34.242	793	27.265	87.4	3.35	81.1	11.15	35.80	0.52	1476.
900	3.22	34.287	892	27.318	82.7	3.16	75.9	12.00	43.16	0.42	1477.
1000	3.06	34.328	991	27.366	78.6	2.99	71.4	12.81	50.97	0.35	1478.
1200	2.79	34.401	1188	27.448	71.4	2.71	63.5	14.31	67.76	0.43	1481.
1500	2.42	34.478	1484	27.541	63.2	2.32	54.6	16.32	95.47	0.61	1484.
2000	2.00	34.563	1976	27.644	54.1	1.86	44.6	19.25	147.57	1.26	1491.
2500	1.73	34.606	2467	27.699	49.4	1.55	39.2	21.81	206.25	1.97	1498.
3000	1.59	34.639	2957	27.736	46.6	1.37	35.4	24.21	273.61	2.57	1506.
3500	1.50	34.657	3446	27.756	45.5	1.23	33.2	26.52	350.04	2.97	1514.
4000	1.50	34.663	3934	27.762	46.3	1.18	32.4	28.82	437.91	3.19	1523.
4100	1.50	34.663	4031	27.762	46.5	1.17	32.3	29.28	457.07	3.27	1524.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OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 82        DATE 10/10/87   GMT 19:36
POSITION    51-11.0 N   138- 6.0 W                           STATION MR13
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS    TEMP     SAL   DEPTH    SIGMA     SVA    THETA    SVA    DELTA      POT.   OXY  SOUND
                                   T                     (THETA)    D        EN
    0   11.04  32.347       0   24.728   322.5   11.04   322.5    0.00      0.00  6.37   1491.
   10   11.04  32.349      10   24.730   322.6   11.04   322.4    0.32      0.02  6.40   1491.
   20   11.04  32.354      20   24.734   322.4   11.04   322.0    0.65      0.07  6.38   1491.
   30   11.05  32.351      30   24.730   323.0   11.05   322.3    0.97      0.15  6.36   1491.
   50   10.86  32.353      50   24.765   320.1   10.85   319.0    1.62      0.42  6.35   1491.
   75   10.32  32.390      75   24.886   308.9   10.31   307.4    2.42      0.93  6.30   1489.
  101    6.67  32.603     100   25.600   240.8    6.66   239.4    3.11      1.54  6.40   1476.
  126    6.36  33.198     125   26.108   192.9    6.35   191.2    3.66      2.17  4.87   1476.
  151    6.09  33.604     150   26.462   159.6    6.08   157.6    4.10      2.79  4.07   1476.
  176    5.77  33.755     175   26.6[illegible] [illegible]44.8    5.76   142.5    4.48      3.43  3.72   1475.
  201    5.43  33.805     200   26.7[illegible]   137.3    5.41   134.8    4.83      4.11  3.34   1474.
  252    5.10  33.858     250   26.782   130.1    5.08   127.1    5.50      5.66  2.42   1474.
  302    4.78  33.899     300   26.851   123.9    4.76   120.6    6.14      7.47  1.88   1474.
  403    4.42  33.990     400   26.962   114.1    4.39   110.0    7.34     11.77  1.17   1474.
  505    4.19  34.087     501   27.063   105.2    4.15   100.3    8.46     16.94  0.80   1475.
  606    3.94  34.168     601   27.154    97.3    3.90    91.7    9.48     22.72  0.51   1475.
  807    3.37  34.267     800   27.288    85.2    3.31    78.8   11.31     35.87  0.49   1476.
 1007    3.03  34.359     997   27.393    76.0    2.96    68.8   12.92     50.67  0.36   1478.
 1213    2.70  34.416    1201   27.468    69.4    2.62    61.6   14.42     67.65  0.52   1480.
 1518    2.33  34.484    1501   27.554    61.7    2.23    53.4   16.41     95.36  0.70   1484.
 2031    1.95  34.561    2006   27.646    53.8    1.81    44.4   19.38    148.89  1.37   1491.
 2537    1.72  34.602    2503   27.697    49.7    1.54    39.4   22.01    209.97  1.91   1499.
 3038    1.60  34.631    2994   27.729    47.5    1.37    36.1   24.45    279.48  2.51   1507.
 3533    1.55  34.648    3477   27.746    46.9    1.28    34.2   26.78    357.37  0.00   1515.


INTERPOLATED TO STANDARD PRESSURE

PRESS    TEMP     SAL   DEPTH    SIGMA     SVA    THETA    SVA    DELTA      POT.   OXY  SOUND
                                   T                     (THETA)    D        EN
    0   11.04  32.347       0   24.728   322.5   11.04   322.5    0.00      0.00  6.37   1491.
   10   11.04  32.349      10   24.730   322.6   11.04   322.4    0.32      0.02  6.40   1491.
   20   11.04  32.354      20   24.734   322.4   11.04   322.0    0.65      0.07  6.38   1491.
   30   11.05  32.351      30   24.730   323.0   11.05   322.3    0.97      0.15  6.36   1491.
   50   10.86  32.353      50   24.765   320.1   10.85   319.0    1.62      0.42  6.35   1491.
   75   10.32  32.390      75   24.886   308.9   10.31   307.4    2.42      0.93  6.30   1489.
  100    6.74  32.599      99   25.587   242.1    6.73   240.7    3.10      1.53  6.40   1477.
  125    6.37  33.182     124   26.094   194.2    6.36   192.5    3.64      2.15  4.92   1476.
  150    6.10  33.590     149   26.450   160.8    6.09   158.7    4.08      2.77  4.09   1476.
  175    5.78  33.749     174   26.614   145.4    5.77   143.1    4.46      3.40  3.74   1475.
  200    5.45  33.802     199   26.697   137.7    5.43   135.2    4.81      4.07  3.36   1475.
  225    5.27  33.831     223   26.742   133.7    5.25   131.0    5.15      4.80  2.89   1474.
  250    5.11  33.856     248   26.779   130.3    5.09   127.4    5.48      5.60  2.45   1474.
  300    4.79  33.897     298   26.848   124.1    4.77   120.9    6.12      7.38  1.90   1474.
  400    4.43  33.988     397   26.959   114.3    4.40   110.2    7.31     11.63  1.19   1474.
  500    4.20  34.083     496   27.059   105.6    4.16   100.7    8.41     16.66  0.81   1475.
  600    3.95  34.163     595   27.149    97.7    3.91    92.2    9.42     22.36  0.52   1475.
  700    3.65  34.218     694   27.222    91.2    3.60    85.2   10.37     28.61  0.50   1476.
  800    3.39  34.264     793   27.284    85.6    3.33    79.2   11.25     35.35  0.49   1476.
  900    3.20  34.312     892   27.340    80.7    3.14    73.9   12.08     42.55  0.42   1477.
 1000    3.04  34.356     990   27.390    76.3    2.97    69.1   12.87     50.14  0.36   1478.
 1200    2.72  34.412    1188   27.464    69.8    2.64    62.0   14.32     66.50  0.51   1480.
 1500    2.35  34.480    1484   27.550    62.1    2.25    53.8   16.30     93.68  0.69   1484.
 2000    1.97  34.557    1976   27.641    54.2    1.83    44.9   19.21    145.46  1.33   1491.
 2500    1.74  34.599    2467   27.693    50.0    1.56    39.8   21.82    205.22  1.88   1498.
 3000    1.61  34.629    2956   27.726    47.7    1.39    36.3   24.27    273.85  2.47   1506.
 3500    1.55  34.647    3445   27.745    47.0    1.28    34.3   26.63    351.89  2.80   1514.
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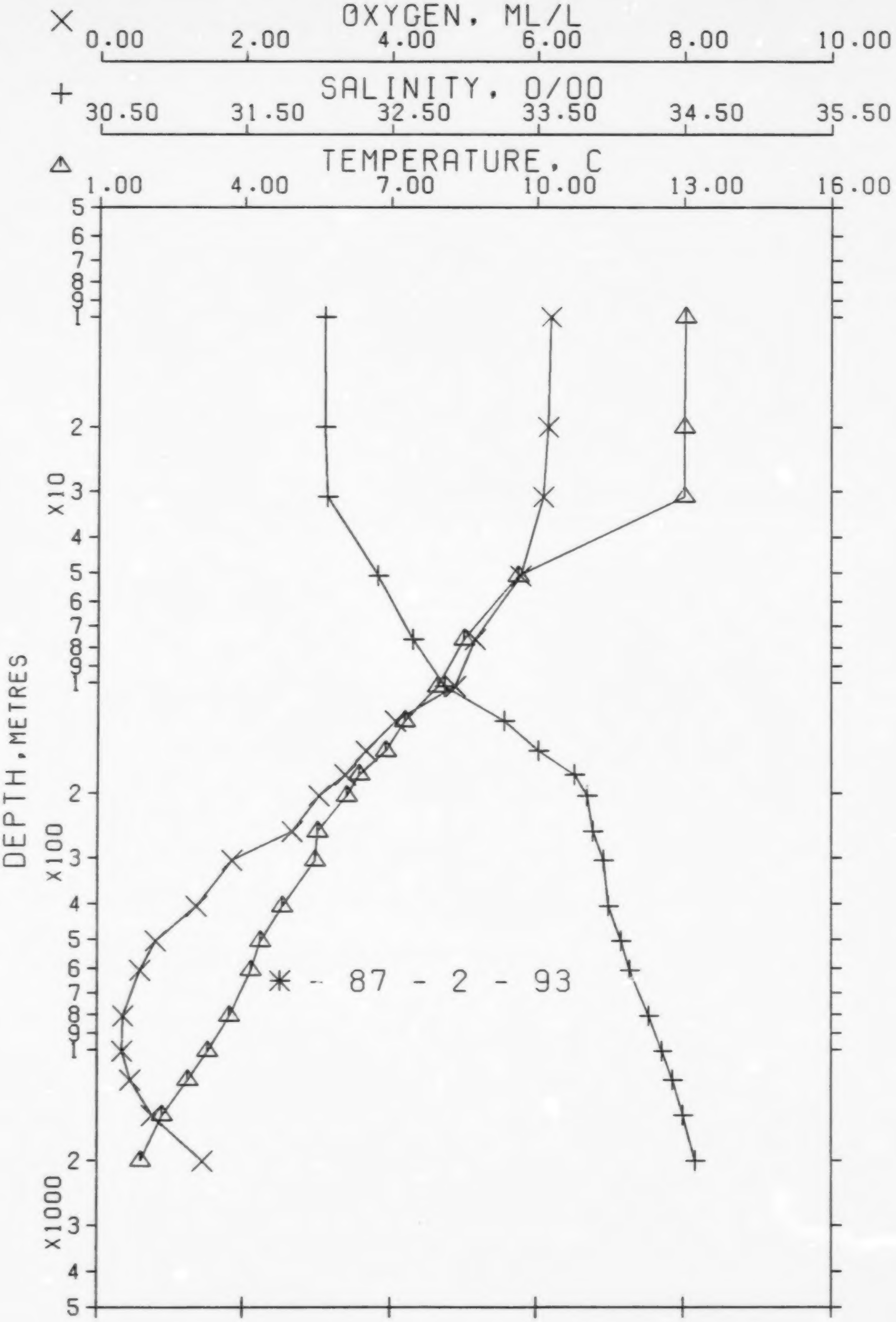
× OXYGEN, ML/L
0.00
2.00
4.00
6.00
8.00
10.00
+ SALINITY, 0/00
30.50
31.50
32.50
33.50
34.50
35.50
△ TEMPERATURE, C
1.00
4.00
7.00
10.00
13.00
16.00
DEPTH, METRES
X10
X100
X1000
5
6
7
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1
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✱ - 87 - 2 - 93

OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 93 DATE 13/10/87 GMT 3: 6
POSITION 51-43.5 N 131-50.0 W STATION MJ03
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	13.05	32.051	0	24.125	380.0	13.05	380.0	0.00	0.00	5.92	1497.
10	13.03	32.050	10	24.129	379.9	13.03	379.7	0.38	0.02	6.19	1497.
20	13.01	32.054	20	24.136	379.5	13.01	379.0	0.76	0.08	6.15	1498.
31	13.01	32.071	31	24.149	378.5	13.01	377.7	1.18	0.19	6.09	1498.
51	9.62	32.414	51	25.021	295.6	9.61	294.6	1.86	0.47	5.78	1487.
76	8.51	32.652	76	25.380	261.7	8.50	260.4	2.56	0.92	5.16	1483.
103	7.97	32.871	102	25.631	238.2	7.96	236.5	3.21	1.52	4.89	1482.
128	7.29	33.280	127	26.048	198.9	7.28	196.8	3.76	2.16	4.07	1480.
154	6.90	33.510	153	26.282	176.9	6.89	174.6	4.25	2.86	3.67	1479.
179	6.36	33.753	178	26.545	152.2	6.34	149.7	4.66	3.57	3.39	1478.
204	6.11	33.839	203	26.645	143.0	6.09	140.2	5.04	4.29	3.04	1477.
256	5.52	33.879	254	26.749	133.5	5.50	130.2	5.75	5.95	2.67	1476.
307	5.47	33.953	305	26.813	128.0	5.44	124.1	6.42	7.88	1.85	1477.
409	4.80	33.988	406	26.919	118.6	4.77	114.0	7.67	12.45	1.36	1476.
510	4.35	34.075	506	27.037	107.9	4.31	102.8	8.81	17.81	0.81	1475.
612	4.16	34.135	607	27.105	102.2	4.11	96.3	9.88	23.92	0.59	1476.
814	3.72	34.264	807	27.252	89.4	3.66	82.2	11.82	37.93	0.36	1478.
1017	3.27	34.353	1007	27.366	79.2	3.20	71.3	13.52	53.78	0.35	1480.
1219	2.87	34.427	1207	27.462	70.5	2.78	62.2	15.03	71.03	0.46	1481.
1523	2.35	34.498	1506	27.564	61.0	2.25	52.5	17.03	98.84	0.76	1484.
2029	1.91	34.581	2004	27.665	51.9	1.77	42.6	19.89	150.48	1.45	1491.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	13.05	32.051	0	24.125	380.0	13.05	380.0	0.00	0.00	5.92	1497.
10	13.03	32.050	10	24.129	379.9	13.03	379.7	0.38	0.02	6.19	1497.
20	13.01	32.054	20	24.136	379.5	13.01	379.0	0.76	0.08	6.15	1498.
30	13.01	32.070	30	24.148	378.6	13.01	377.8	1.14	0.17	6.09	1498.
50	9.79	32.397	50	24.980	299.5	9.79	298.5	1.82	0.45	5.80	1487.
75	8.56	32.641	75	25.363	263.3	8.55	262.0	2.52	0.89	5.19	1483.
100	8.02	32.852	99	25.609	240.2	8.01	238.6	3.15	1.45	4.91	1482.
125	7.36	33.239	124	26.007	202.8	7.35	200.8	3.70	2.09	4.15	1480.
150	6.95	33.478	149	26.250	180.0	6.94	177.7	4.18	2.75	3.72	1479.
175	6.44	33.715	174	26.504	156.1	6.43	153.5	4.60	3.45	3.43	1478.
200	6.15	33.825	199	26.628	144.5	6.13	141.7	4.97	4.16	3.09	1477.
225	5.86	33.856	223	26.690	138.9	5.84	135.9	5.33	4.93	2.88	1477.
250	5.58	33.875	248	26.739	134.4	5.56	131.2	5.67	5.75	2.70	1476.
300	5.48	33.943	298	26.805	128.7	5.45	124.9	6.32	7.59	1.95	1476.
400	4.85	33.985	397	26.911	119.3	4.82	114.8	7.56	12.00	1.40	1476.
500	4.39	34.067	496	27.026	108.9	4.35	103.8	8.70	17.24	0.86	1475.
600	4.18	34.128	595	27.097	102.9	4.14	97.0	9.76	23.15	0.62	1476.
700	3.95	34.196	694	27.174	96.2	3.90	89.7	10.75	29.75	0.48	1477.
800	3.75	34.256	793	27.243	90.2	3.69	83.1	11.69	36.86	0.38	1478.
900	3.52	34.304	892	27.304	84.8	3.45	77.3	12.56	44.44	0.36	1479.
1000	3.30	34.346	990	27.358	79.9	3.23	72.1	13.38	52.40	0.35	1479.
1200	2.91	34.420	1188	27.454	71.3	2.82	63.0	14.90	69.33	0.45	1481.
1500	2.39	34.493	1484	27.557	61.6	2.28	53.1	16.89	96.69	0.74	1484.
2000	1.93	34.577	1976	27.660	52.3	1.79	43.1	19.74	147.39	1.42	1490.

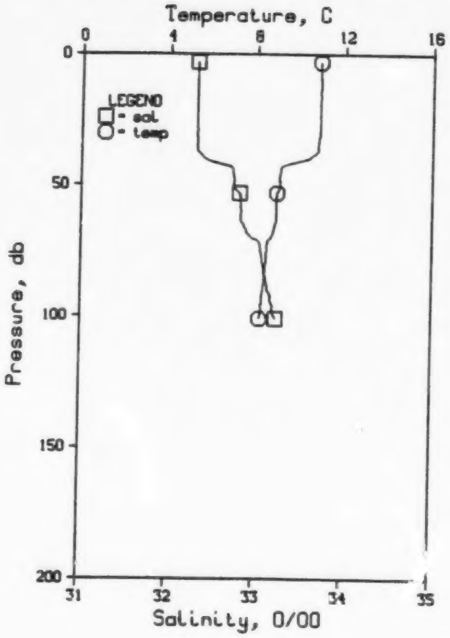
Table 5. Sea surface salinity (3m depth) observed via the seawater loop during Cruise III. (24 November - 9 December 1987).

SURFACE SALINITY DATA CRUISE III (87-4)

STN.	LAT.	LONG.	DATE			TIME	SALINITY
NO.	(° 'N)	(° 'W)	YR	MO	DY	(U.T.C.)	(°/oo)
JF01	48 16.0	123 30.0	87	11	24	22:47	31.931
JF02	48 18.0	124 00.0	87	11	25	01:32	31.978
JF03	48 27.0	124 30.0	87	11	25	03:59	31.216
JF04	48 32.3	125 00.0	87	11	25	06:10	31.857
MP01	48 34.5	125 30.0	87	11	25	08:30	32.299
MP03	48 37.5	126 20.0	87	11	25	12:30	32.249
MP04	48 39.0	126 40.0	87	11	25	13:55	32.239
MA05	48 20.2	127 06.0	87	11	26	23:10	32.238
MA04	48 30.2	126 52.5	87	11	26	01:38	32.239
MA3B	48 36.2	126 44.2	87	11	26	03:35	32.236
MA03	48 40.2	126 38.8	87	11	26	05:20	32.238
MA2B	48 45.2	126 32.0	87	11	26	06:50	32.245
MA02	48 50.2	126 25.3	87	11	26	07:57	32.272
MA1B	48 55.2	126 18.0	87	11	26	08:50	32.304
MA01	49 00.0	126 11.7	87	11	26	09:37	32.168
MA0B	49 03.8	126 05.9	87	11	26	10:17	32.013
MA00	49 08.0	126 00.2	87	11	26	10:57	31.863
MP05	48 41.6	127 10.0	87	11	26	19:09	32.232
MP06	48 44.6	127 40.0	87	11	26	21:10	32.346
MP07	48 46.6	128 10.0	87	11	26	23:21	32.234
MP08	48 49.0	128 40.0	87	11	27	01:28	32.186
MP09	48 51.4	129 10.0	87	11	27	03:31	32.192
MP10	48 53.6	129 40.0	87	11	27	05:32	32.214
MP11	48 56.0	130 10.0	87	11	27	07:29	32.073
MP12	48 58.2	130 40.0	87	11	27	09:28	32.194
MP13	49 02.6	131 40.0	87	11	27	13:30	32.084
MP14	49 07.4	132 40.0	87	11	27	17:31	32.354
MP15	49 12.0	133 40.0	87	11	27	21:30	32.305
MP16	49 17.0	139 40.0	87	11	28	02:00	32.292
MP17	49 21.0	135 40.0	87	11	28	06:43	32.369
MP18	49 26.0	136 40.0	87	11	28	11:26	32.507
MP19	49 30.0	137 40.0	87	11	28	15:55	32.507
MP20	49 34.0	138 40.0	87	11	28	20.09	32.481
MP21	49 38.0	139 40.0	87	11	29	00:28	32.469
MP22	49 42.0	140 40.0	87	11	29	04:17	32.535
MP23	49 46.0	141 40.0	87	11	29	08:16	32.553
MP24	49 50.2	142 40.0	87	11	29	12:17	32.493
MP25	50 00.0	143 36.3	87	11	29	16:02	32.484
MP35	50 00.0	144 18.2	87	11	29	18:49	32.501
OS01	48 34.8	141 46.2	87	12	02	02:05	32.592
OS02	48 34.8	140 57.4	87	12	02	05:58	32.595
OS03	48 34.8	140 08.7	87	12	02	10:24	32.486
OS04	48 34.8	139 20.0	87	12	02	14:22	32.504
OS05	48 31.8	138 31.3	87	12	02	18:15	32.551
OS06	48 34.8	137 42.6	87	12	02	22:25	32.442
OS12	48 02.4	137 43.6	87	12	03	02:40	32.524
OS11	48 02.4	138 31.8	87	12	03	06:40	32.594
OS10	48 02.4	139 20.0	87	12	03	11:33	32.551
OS09	48 02.4	140 08.2	87	12	03	16:07	32.565
OS08	48 02.4	140 56.4	87	12	03	20:42	32.589
OS07	48 02.4	141 44.8	87	12	04	01:32	32.587
OS13	47 30.0	141 43.3	87	12	04	05:37	32.607
OS14	47 30.0	140 55.5	87	12	04	09:50	32.530
OS15	47 30.0	140 07.8	87	12	04	14:09	32.525
OS31	47 30.0	139 43.9	87	12	05	04:45	32.576
OS34	47 46.2	139 20.0	87	12	05	12:30	32.561
OS16	47 27.9	139 16.4	87	12	05	20:13	32.630
	51 44.4	128 00.7	87	12	08	15:19	30.510
	50 26.6	126 00.2	87	12	09	05:00	29.662

Table 6

STP data taken during Cruise III.



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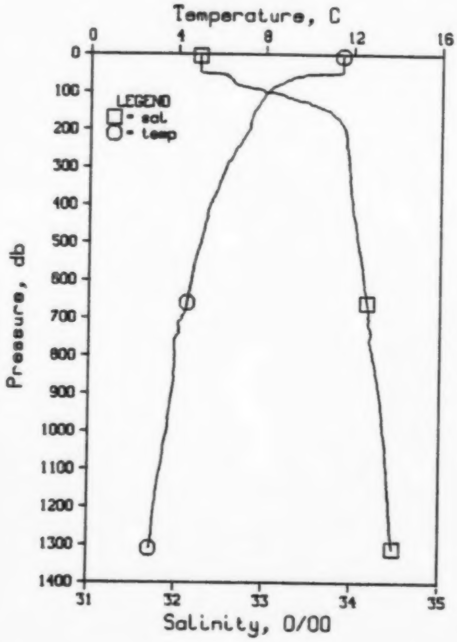
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04-  1          DATE 25/11/87
POSITION  48-34.5N, 125-30.0W    GMT  8:46     STATION MP01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  10.88  32.31       0   24.73  322.3    0.00     0.00  1490.
   10  10.88  32.31      10   24.73  322.7    0.32     0.02  1490.
   20  10.88  32.31      20   24.73  322.7    0.65     0.07  1490.
   30  10.87  32.31      30   24.73  322.9    0.97     0.15  1491.
   50   9.07  32.74      50   25.36  263.2    1.56     0.39  1485.
   75   8.48  33.05      75   25.70  231.7    2.18     0.78  1483.
  100   8.19  33.22      99   25.87  215.6    2.74     1.28  1483.

DEEPEST MEASUREMENT:

  101   8.18  33.23     100   25.88  214.8    2.77     1.30  1483.
```



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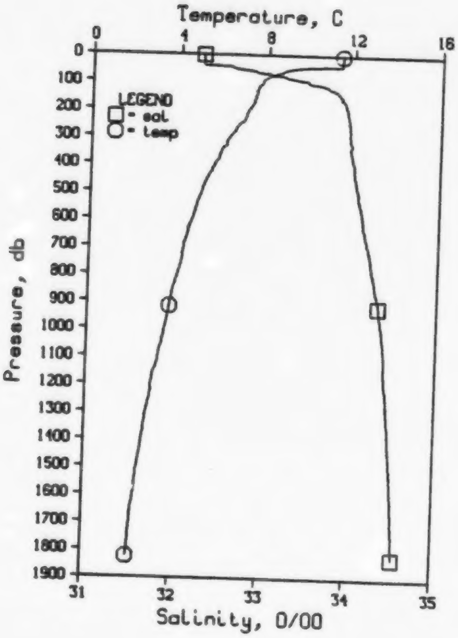
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04-  2          DATE 25/11/87
POSITION  48-39.0N, 126-40.0W    GMT 17:38     STATION MP04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0  11.47  32.25       0   24.57  337.2    0.00     0.00  1492.
   10  11.47  32.25      10   24.57  337.4    0.34     0.02  1492.
   20  11.47  32.24      20   24.57  337.7    0.67     0.07  1492.
   30  11.47  32.25      30   24.57  337.9    1.01     0.15  1493.
   50  11.18  32.31      50   24.68  328.6    1.69     0.43  1492.
   75   8.81  32.63      75   25.32  267.4    2.39     0.88  1484.
  100   8.15  32.98      99   25.69  232.5    3.01     1.43  1482.
  125   7.77  33.44     124   26.11  193.4    3.54     2.03  1482.
  150   7.49  33.73     149   26.37  168.4    3.99     2.67  1482.
  175   7.34  33.84     174   26.48  158.6    4.40     3.34  1482.
  200   7.27  33.91     199   26.54  153.2    4.79     4.09  1482.
  225   6.99  33.92     224   26.59  148.6    5.17     4.90  1481.
  250   6.66  33.93     248   26.65  143.9    5.54     5.79  1480.
  300   6.24  33.96     298   26.72  137.0    6.24     7.76  1480.
  400   5.50  33.99     397   26.84  126.3    7.56    12.45  1478.
  500   5.09  34.06     496   26.94  117.5    8.77    18.03  1478.
  600   4.68  34.13     595   27.04  108.7    9.90    24.31  1478.
  800   3.93  34.23     793   27.21   93.9   11.91    38.61  1479.
 1000   3.60  34.36     991   27.34   82.6   13.66    54.64  1481.
 1200   3.04  34.44    1188   27.46   71.4   15.19    71.72  1482.

DEEPEST MEASUREMENT:

 1310   2.81  34.48    1297   27.51   66.4   15.94    81.40  1483.
```

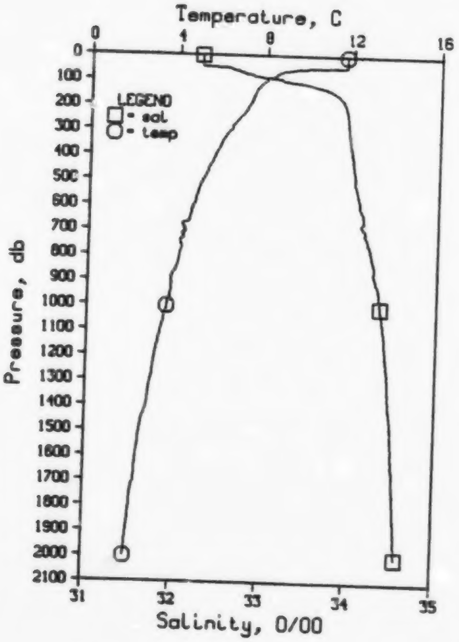


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04-  3          DATE 25/11/87
POSITION  48-20.2N, 127- 6.0W    GMT 23:13      STATION MA05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL    DEPTH   SIGMA    SVA   DELTA    POT.   SOUND
                                 T              D       EN
    0  11.39  32.25       0    24.59  335.7    0.00    0.00   1492.
   10  11.39  32.25      10    24.59  335.7    0.34    0.02   1492.
   20  11.39  32.25      20    24.59  335.9    0.67    0.07   1492.
   30  11.39  32.25      30    24.59  336.2    1.01    0.15   1492.
   50   9.22  32.60      50    25.23  275.4    1.63    0.41   1485.
   75   8.15  33.11      75    25.79  222.6    2.25    0.80   1482.
  100   7.74  33.46      99    26.13  191.1    2.76    1.25   1482.
  125   7.52  33.73     124    26.37  168.2    3.20    1.76   1481.
  150   7.39  33.83     149    26.47  159.3    3.61    2.32   1481.
  175   7.32  33.89     174    26.52  154.6    4.00    2.97   1482.
  200   7.09  33.92     199    26.58  149.7    4.38    3.70   1481.
  225   6.98  33.94     223    26.61  147.2    4.75    4.51   1481.
  250   6.72  33.95     248    26.65  143.5    5.12    5.39   1481.
  300   6.27  33.96     298    26.72  137.2    5.82    7.35   1480.
  400   5.60  34.01     397    26.84  126.3    7.14   12.05   1479.
  500   5.03  34.06     496    26.95  116.6    8.35   17.62   1478.
  600   4.64  34.13     595    27.05  108.4    9.48   23.92   1478.
  800   4.04  34.25     793    27.21   93.7   11.49   38.25   1479.
 1000   3.52  34.37     991    27.36   80.5   13.22   54.09   1480.
 1200   2.96  34.42    1188    27.45   71.9   14.74   71.10   1481.
 1500   2.44  34.50    1484    27.56   61.7   16.75   98.59   1484.

DEEPEST MEASUREMENT:

1824    2.08  34.56    1803    27.63   54.8   18.63  130.39   1488.
```

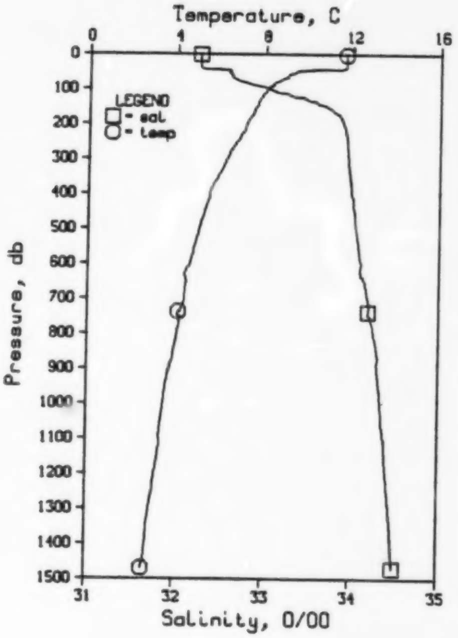


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04-  4          DATE 26/11/87
POSITION  48-30.2N, 126-52.5W    GMT  1:40      STATION MA04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL    DEPTH   SIGMA    SVA   DELTA    POT.   SOUND
                                 T              D       EN
    0  11.67  32.25       0    24.54  340.2    0.00    0.00   1493.
   10  11.66  32.25      10    24.54  340.4    0.34    0.02   1493.
   20  11.67  32.25      20    24.54  340.8    0.68    0.07   1493.
   30  11.67  32.25      30    24.54  341.0    1.02    0.16   1493.
   50   9.90  32.54      50    25.07  290.8    1.70    0.43   1488.
   75   8.47  32.76      75    25.47  253.3    2.36    0.85   1483.
  100   7.97  33.17      99    25.87  215.6    2.95    1.37   1482.
  125   7.66  33.58     124    26.23  181.7    3.44    1.93   1482.
  150   7.46  33.79     149    26.43  163.5    3.87    2.53   1482.
  175   7.35  33.87     174    26.50  156.5    4.26    3.19   1482.
  200   7.18  33.91     199    26.56  151.7    4.65    3.93   1482.
  225   6.99  33.92     223    26.60  148.3    5.02    4.74   1481.
  250   6.74  33.94     248    26.64  144.3    5.39    5.62   1481.
  300   6.33  33.96     298    26.71  138.3    6.10    7.60   1480.
  400   5.68  34.00     397    26.83  127.9    7.42   12.33   1479.
  500   5.13  34.04     496    26.92  119.6    8.66   18.00   1478.
  600   4.70  34.10     595    27.02  111.2    9.81   24.45   1478.
  800   4.14  34.24     793    27.19   95.8   11.88   39.13   1480.
 1000   3.62  34.35     991    27.33   83.2   13.66   55.41   1481.
 1200   3.13  34.43    1188    27.44   73.4   15.21   72.83   1482.
 1500   2.52  34.50    1484    27.55   62.6   17.26  100.91   1485.
 2000   1.93  34.59    1976    27.67   51.5   20.10  151.38   1490.

DEEPEST MEASUREMENT:

2001    1.92  34.59    1977    27.67   51.3   20.11  151.48   1490.
```

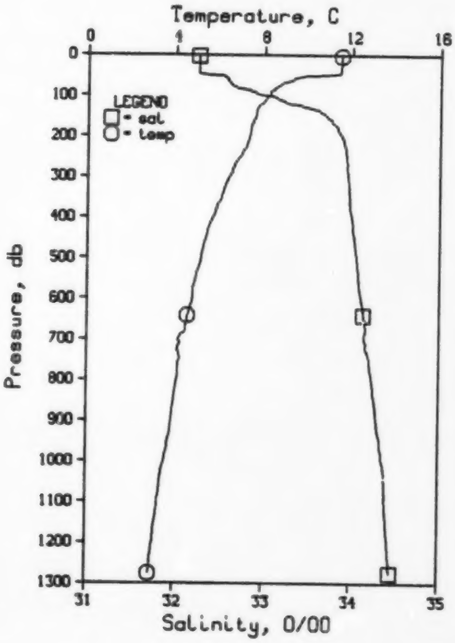


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04-  5          DATE 26/11/87
POSITION  48-36.2N, 125-44.2W    GMT  3:38    STATION MA38
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0  11.66  32.25      0   24.54  340.3   0.00    0.00  1493.
   10  11.67  32.25     10   24.54  340.6   0.34    0.02  1493.
   20  11.67  32.25     20   24.54  340.9   0.68    0.07  1493.
   30  11.67  32.25     30   24.54  341.0   1.02    0.16  1493.
   50   9.35  32.58     50   25.20  279.0   1.67    0.42  1486.
   75   8.64  32.68     75   25.38  261.8   2.35    0.85  1484.
  100   8.04  33.04     99   25.75  226.7   2.96    1.39  1482.
  125   7.74  33.43    124   26.10  193.9   3.49    2.00  1482.
  150   7.56  33.70    149   26.34  171.7   3.95    2.64  1482.
  175   7.37  33.85    174   26.49  158.2   4.36    3.33  1482.
  200   7.12  33.89    199   26.55  152.3   4.75    4.07  1481.
  225   6.96  33.92    224   26.60  148.2   5.12    4.88  1481.
  250   6.70  33.94    248   26.65  143.9   5.49    5.76  1481.
  300   6.26  33.95    298   26.72  137.6   6.19    7.73  1480.
  400   5.49  33.99    397   26.84  126.2   7.51   12.42  1478.
  500   5.03  34.05    496   26.94  117.9   8.73   18.01  1478.
  600   4.66  34.12    595   27.03  109.4   9.87   24.38  1478.
  800   4.07  34.26    793   27.21   93.7  11.90   38.81  1479.
 1000   3.50  34.35    991   27.34   82.2  13.64   54.79  1480.
 1200   3.14  34.42   1188   27.43   74.2  15.21   72.33  1482.
 1500   2.60  34.53   1484   27.57   61.1  17.24   99.95  1485.

DEEPEST MEASUREMENT:

1470    2.60  34.50   1454   27.55   63.1  17.05   97.13  1484.
```



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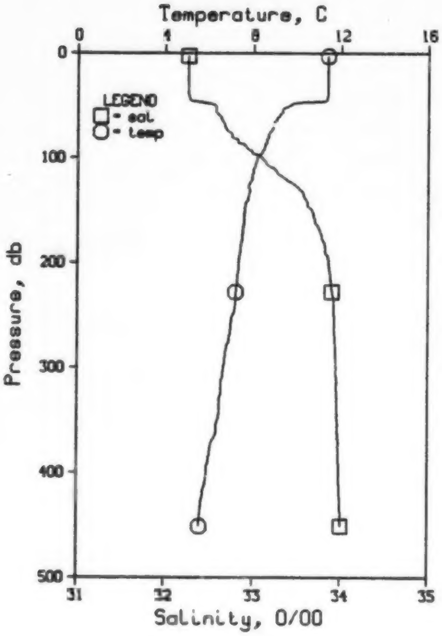
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04-  6          DATE 26/11/87
POSITION  48-40.2N, 126-38.8W    GMT  5:23    STATION MA03
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0  11.47  32.25      0   24.58  337.0   0.00    0.00  1492.
   10  11.47  32.25     10   24.58  337.2   0.34    0.02  1492.
   20  11.47  32.25     20   24.58  337.4   0.67    0.07  1492.
   30  11.46  32.25     30   24.58  337.4   1.01    0.15  1493.
   50  10.31  32.48     50   24.96  301.8   1.68    0.43  1489.
   75   8.65  32.63     75   25.34  265.4   2.37    0.87  1484.
  100   8.17  33.01     99   25.71  230.6   2.99    1.42  1483.
  125   7.73  33.42    124   26.10  194.1   3.53    2.03  1482.
  150   7.59  33.69    149   26.33  172.5   3.98    2.66  1482.
  175   7.38  33.82    174   26.46  160.4   4.40    3.35  1482.
  200   7.28  33.88    199   26.52  155.4   4.79    4.11  1482.
  225   7.17  33.92    224   26.56  151.5   5.17    4.94  1482.
  250   6.90  33.94    248   26.62  146.8   5.55    5.84  1481.
  300   6.38  33.96    298   26.70  139.0   6.26    7.84  1480.
  400   5.66  34.00    397   26.83  127.9   7.60   12.61  1479.
  500   5.15  34.06    496   26.93  118.6   8.83   18.24  1479.
  600   4.77  34.11    595   27.02  111.3   9.98   24.67  1479.
  800   4.11  34.24    793   27.20   95.3  12.03   39.26  1479.
 1000   3.55  34.37    991   27.35   81.3  13.81   55.51  1480.
 1200   3.05  34.44   1188   27.45   71.7  15.33   72.55  1482.

DEEPEST MEASUREMENT:

1276    2.89  34.47   1263   27.49   68.2  15.86   79.25  1482.
```

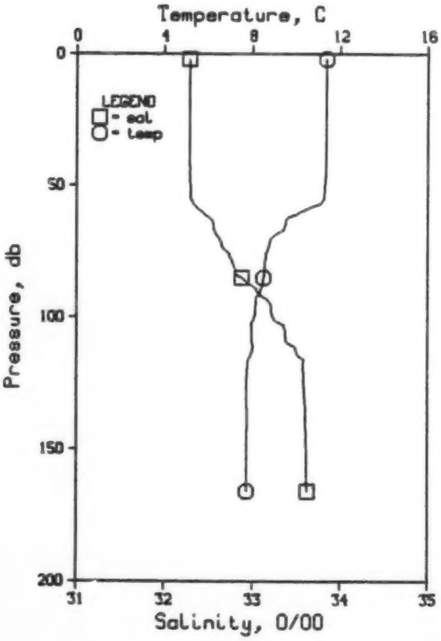


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04-  7          DATE 26/11/87
POSITION  48-45.2N, 126-32.0W   GMT  6:53    STATION MA28
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
   0   11.37   32.25      0   24.60   335.0   0.00     0.00  1492.
  10   11.37   32.26     10   24.60   334.9   0.34     0.02  1492.
  20   11.37   32.26     20   24.60   335.2   0.67     0.07  1492.
  30   11.37   32.26     30   24.60   335.3   1.01     0.15  1492.
  50    9.64   32.56     50   25.13   285.1   1.66     0.42  1487.
  75    8.74   32.71     75   25.39   260.6   2.34     0.85  1484.
 100    8.16   33.09     99   25.77   224.6   2.95     1.40  1483.
 125    7.78   33.46    124   26.12   192.3   3.48     2.00  1482.
 150    7.57   33.67    149   26.31   174.5   3.94     2.64  1482.
 175    7.47   33.78    174   26.41   165.0   4.36     3.34  1482.
 200    7.32   33.86    199   26.50   157.6   4.76     4.11  1482.
 225    7.21   33.89    224   26.[illegible]   153.8   5.15     4.96  1482.
 250    7.04   33.92    248   26.[illegible]   149.8   5.53     5.88  1482.
 300    6.65   33.95    298   26.66   143.2   6.27     7.93  1481.
 400    5.89   33.98    397   26.79   132.1   7.65    12.86  1480.

DEEPEST MEASUREMENT:

 451    5.57   34.00    448   26.84   127.1   8.31    15.72  1479.
```

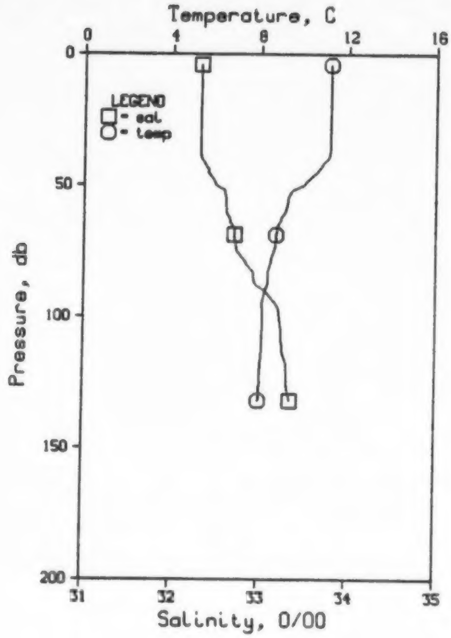


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04-  8          DATE 26/11/87
POSITION  48-50.2N, 126-25.3W   GMT  7:57    STATION MA02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
   0   11.35   32.28      0   24.63   332.4   0.00     0.00  1492.
  10   11.35   32.28     10   24.62   332.6   0.33     0.02  1492.
  20   11.35   32.28     20   24.62   332.9   0.67     0.07  1492.
  30   11.35   32.28     30   24.62   333.2   1.00     0.15  1492.
  50   11.30   32.29     50   24.64   331.8   1.66     0.42  1492.
  75    8.65   32.70     75   25.40   259.9   2.41     0.89  1484.
 100    8.07   33.23     99   25.90   213.2   3.00     1.42  1483.
 125    7.72   33.59    124   26.23   182.0   3.48     1.97  1482.
 150    7.73   33.61    149   26.25   180.5   3.93     2.60  1483.

DEEPEST MEASUREMENT:

 166    7.72   33.62    165   26.26   179.9   4.22     3.07  1483.
```

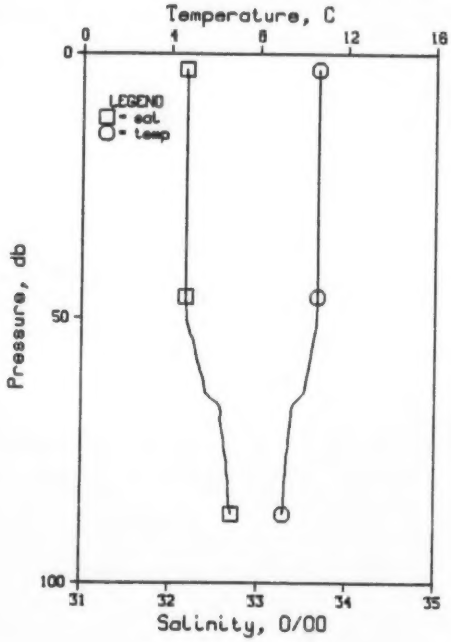


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 9 DATE 26/11/87
POSITION 48-55.2N, 126-18.0W GMT 8:50 STATION MA18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.16	32.31	0	24.68	327.0	0.00	0.00	1491.
10	11.16	32.31	10	24.68	327.2	0.33	0.02	1491.
20	11.16	32.31	20	24.68	327.5	0.65	0.07	1491.
30	11.16	32.31	30	24.68	327.6	0.98	0.15	1492.
50	9.39	32.50	50	25.02	295.3	1.62	0.41	1488.
75	8.63	32.74	75	25.43	257.1	2.29	0.84	1484.
100	8.12	33.22	99	25.88	214.2	2.88	1.35	1483.
125	8.01	33.31	124	25.97	206.4	3.40	1.96	1483.

DEEPEST MEASUREMENT:

132	7.96	33.35	131	26.01	203.0	3.55	2.14	1483.

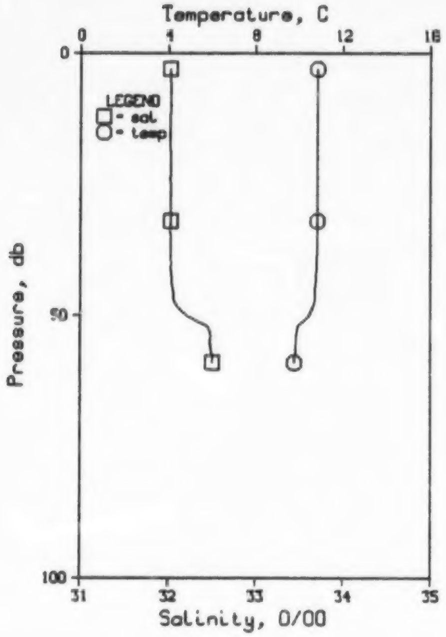


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 10 DATE 26/11/87
POSITION 49- 0.0N, 126-11.7W GMT 9:37 STATION MA01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.65	32.17	0	24.66	329.3	0.00	0.00	1489.
10	10.65	32.17	10	24.66	329.1	0.33	0.02	1489.
20	10.65	32.17	20	24.66	329.3	0.66	0.07	1489.
30	10.65	32.17	30	24.66	329.5	0.99	0.15	1490.
50	10.63	32.19	50	24.68	328.2	1.65	0.42	1490.
75	9.37	32.63	75	25.23	276.1	2.40	0.90	1486.

DEEPEST MEASUREMENT:

87	9.16	32.71	87	25.32	267.4	2.73	1.17	1486.



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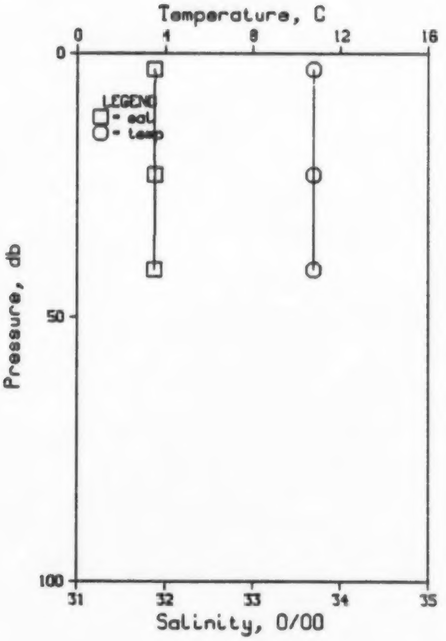
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 11         DATE 26/11/87
POSITION  49- 3.8N, 126- 5.9W   GMT 10:16     STATION MA08
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
   0   10.81   32.02      0   24.52  342.8   0.00    0.00  1489.
  10   10.81   32.02     10   24.52  342.9   0.34    0.02  1490.
  20   10.81   32.02     20   24.52  343.1   0.69    0.07  1490.
  30   10.81   32.02     30   24.52  343.3   1.03    0.16  1490.
  50   10.44   32.21     50   24.72  323.8   1.71    0.44  1489.

DEEPEST MEASUREMENT:

  59    9.78   32.51     59   25.07  291.5   1.99    0.59  1487.
```



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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 12         DATE 26/11/87
POSITION  49- 8.0N, 126- 0.2W   GMT 11: 1     STATION MA00
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

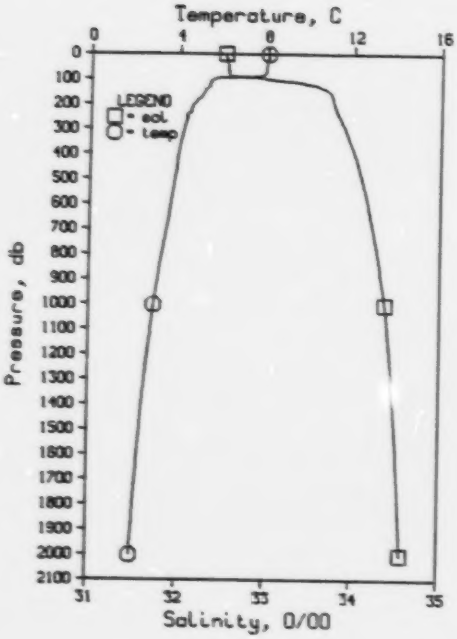
PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
   0   10.76   31.87      0   24.41  353.0   0.00    0.00  1489.
  10   10.76   31.87     10   24.41  353.3   0.35    0.02  1489.
  20   10.76   31.87     20   24.41  353.3   0.71    0.07  1489.
  30   10.76   31.87     30   24.41  353.5   1.06    0.16  1490.

DEEPEST MEASUREMENT:

  41   10.76   31.87     41   24.41  354.0   1.45    0.30  1490.

PRES  DEPTH     TEMP     SAL       PRES  DEPTH     TEMP     SAL

  0.           10.761  31.872       23.           10.762  31.873
  4.           10.759  31.873       24.           10.762  31.874
  5.           10.757  31.873       25.           10.762  31.874
  6.           10.758  31.872       26.           10.762  31.873
  7.           10.758  31.872       27.           10.761  31.874
  8.           10.759  31.871       28.           10.761  31.873
  9.           10.758  31.872       29.           10.762  31.873
 10.           10.759  31.870       30.           10.762  31.873
 11.           10.760  31.870       31.           10.762  31.873
 12.           10.760  31.870       32.           10.762  31.873
 13.           10.760  31.870       33.           10.762  31.873
 14.           10.760  31.670       34.           10.763  31.873
 15.           10.759  31.870       35.           10.763  31.872
 16.           10.760  31.870       36.           10.763  31.872
 17.           10.760  31.870       37.           10.762  31.872
 18.           10.760  31.870       38.           10.762  31.872
 19.           10.760  31.870       39.           10.760  31.870
 20.           10.760  31.872       40.           10.761  31.870
 21.           10.762  31.874       41.           10.760  31.869
 22.           10.762  31.873
```



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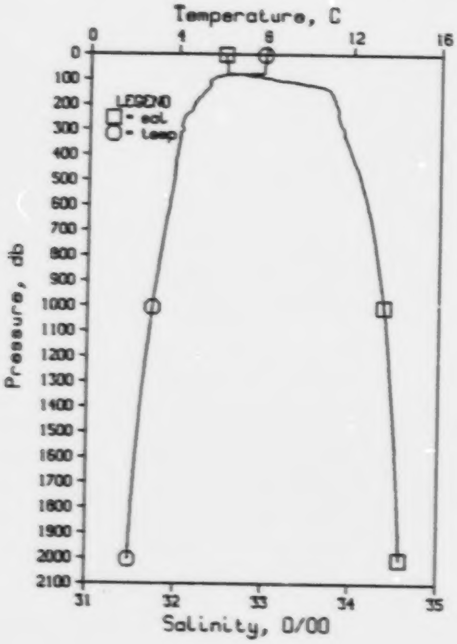
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 13          DATE 30/11/87
POSITION  50- 0.0N, 145- 0.0W    GMT  4:56    STATION MP26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0   8.01  32.52       0   25.35  263.4   0.00    0.00  1480.
   10   8.01  32.52      10   25.35  263.5   0.26    0.01  1480.
   20   7.99  32.53      20   25.36  262.7   0.53    0.05  1480.
   30   7.95  32.54      30   25.37  261.8   0.79    0.12  1480.
   50   7.91  32.54      50   25.38  260.8   1.31    0.33  1480.
   75   7.87  32.55      75   25.39  260.3   1.96    0.75  1480.
  100   5.56  32.98      99   26.03  199.5   2.57    1.28  1472.
  125   5.34  33.54     124   26.51  154.9   3.01    1.78  1473.
  150   5.13  33.70     149   26.66  140.9   3.37    2.30  1472.
  175   4.92  33.75     174   26.72  135.2   3.72    2.87  1472.
  200   4.64  33.77     199   26.76  131.1   4.05    3.50  1471.
  225   4.52  33.80     223   26.80  127.9   4.37    4.20  1471.
  250   4.32  33.82     248   26.84  123.9   4.69    4.97  1471.
  300   4.22  33.90     298   26.91  117.8   5.29    6.66  1471.
  400   3.98  34.01     397   27.02  107.9   6.42   10.67  1472.
  500   3.82  34.10     496   27.11  100.5   7.46   15.44  1473.
  600   3.65  34.17     595   27.18   94.0   8.43   20.88  1474.
  800   3.28  34.29     793   27.31   83.0  10.20   33.49  1476.
 1000   2.93  34.37     990   27.41   73.9  11.77   47.82  1478.
 1200   2.66  34.43    1188   27.48   67.8  13.19   63.68  1480.
 1500   2.34  34.50    1484   27.56   60.9  15.11   90.10  1484.
 2000   1.97  34.57    1976   27.65   53.0  17.94  140.42  1491.

DEEPEST MEASUREMENT:

2002    1.97  34.57    1978   27.65   53.0  17.95  140.64  1491.
```

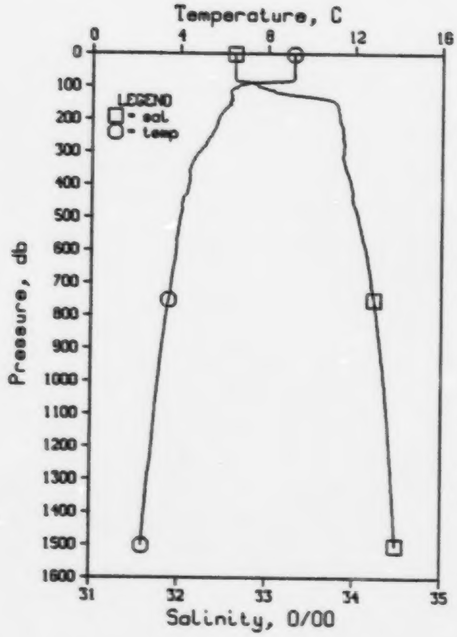


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 14          DATE 30/11/87
POSITION  50- 0.0N, 145- 0.0W    GMT 10:30    STATION MP26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0   7.92  32.53       0   25.37  261.3   0.00    0.00  1479.
   10   7.92  32.53      10   25.37  261.6   0.26    0.01  1480.
   20   7.93  32.53      20   25.37  261.8   0.52    0.05  1480.
   30   7.94  32.53      30   25.37  262.0   0.79    0.12  1480.
   50   7.89  32.55      50   25.39  260.2   1.31    0.33  1480.
   75   7.86  32.56      75   25.40  259.7   1.96    0.75  1480.
  100   5.49  33.08      99   26.12  190.9   2.50    1.23  1472.
  125   5.44  33.54     124   26.49  156.2   2.93    1.72  1473.
  150   5.19  33.74     149   26.68  138.9   3.29    2.23  1473.
  175   4.92  33.78     174   26.74  133.3   3.63    2.79  1472.
  200   4.72  33.80     199   26.78  129.4   3.96    3.42  1472.
  225   4.60  33.83     223   26.82  126.3   4.28    4.11  1471.
  250   4.27  33.83     248   26.85  122.9   4.59    4.86  1471.
  300   4.22  33.90     298   26.91  118.0   5.19    6.55  1471.
  400   3.97  33.99     397   27.01  109.3   6.33   10.60  1472.
  500   3.84  34.09     496   27.10  100.9   7.38   15.39  1473.
  600   3.65  34.17     595   27.19   93.8   8.35   20.84  1474.
  800   3.28  34.28     793   27.31   82.7  10.11   33.33  1476.
 1000   2.93  34.37     990   27.41   74.1  11.67   47.64  1478.
 1200   2.66  34.43    1188   27.48   67.8  13.09   63.49  1480.
 1500   2.32  34.50    1484   27.57   60.4  15.01   89.91  1484.
 2000   1.94  34.57    1976   27.66   52.7  17.81  139.69  1490.

DEEPEST MEASUREMENT:

2005    1.94  34.58    1981   27.66   52.4  17.84  140.22  1491.
```

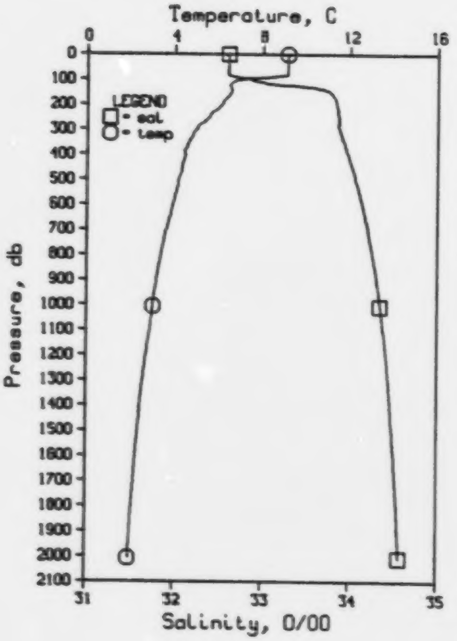


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 15          DATE  2/12/87
POSITION  48-34.8N, 141-46.2W    GMT   2: 6     STATION OS01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0   9.16  32.62       0   25.25  272.4    0.00     0.00  1484.
   10   9.16  32.62      10   25.25  272.7    0.27     0.01  1484.
   20   9.17  32.62      20   25.25  273.0    0.55     0.06  1485.
   30   9.17  32.62      30   25.25  273.5    0.82     0.13  1485.
   50   9.16  32.62      50   25.25  273.5    1.37     0.35  1485.
   75   9.17  32.62      75   25.25  274.0    2.05     0.78  1485.
  100   6.59  32.88      99   25.83  219.4    2.67     1.33  1476.
  125   6.32  33.22     124   26.13  190.6    3.18     1.92  1476.
  150   6.24  33.76     149   26.57  149.7    3.59     2.49  1477.
  175   5.97  33.80     174   26.63  143.6    3.96     3.10  1476.
  200   5.73  33.82     199   26.68  139.6    4.31     3.77  1476.
  225   5.61  33.85     223   26.72  136.3    4.66     4.52  1476.
  250   5.42  33.86     248   26.75  133.4    4.99     5.34  1475.
  300   4.89  33.87     298   26.82  127.2    5.65     7.16  1474.
  400   4.41  33.95     397   26.93  116.6    6.86    11.49  1474.
  500   4.03  34.04     496   27.04  107.2    7.98    16.63  1474.
  600   3.86  34.13     595   27.13   99.1    9.01    22.40  1475.
  800   3.41  34.25     793   27.27   86.6   10.87    35.60  1476.
 1000   3.07  34.34     991   27.38   77.5   12.50    50.57  1478.
 1200   2.80  34.41    1186   27.45   70.9   13.98    67.13  1481.
 1500   2.38  34.49    1484   27.55   61.9   15.96    94.32  1484.

DEEPEST MEASUREMENT:

1502    2.37  34.49    1486   27.56   61.7   15.98    94.51  1484.
```



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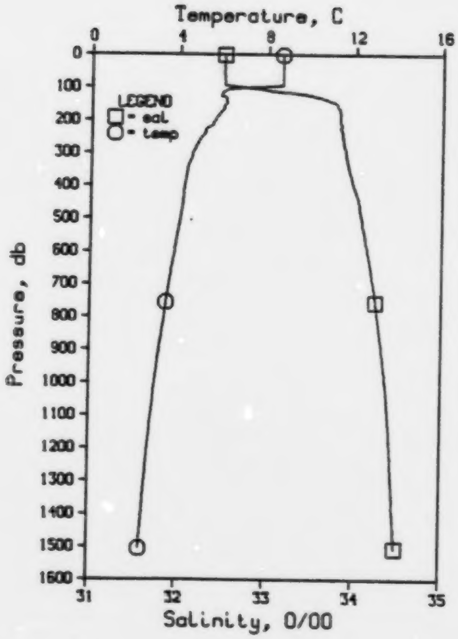
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 16          DATE  2/12/87
POSITION  48-34.8N, 140-57.4W    GMT   5:59     STATION OS02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0   9.09  32.60       0   25.25  272.7    0.00     0.00  1484.
   10   9.09  32.60      10   25.25  272.9    0.27     0.01  1484.
   20   9.10  32.60      20   25.25  273.2    0.55     0.06  1484.
   30   9.10  32.60      30   25.25  273.5    0.82     0.13  1484.
   50   9.10  32.60      50   25.25  273.8    1.37     0.35  1485.
   75   9.10  32.60      75   25.25  274.4    2.05     0.79  1485.
  100   6.99  32.85      99   25.75  226.4    2.70     1.36  1478.
  125   6.47  33.33     124   26.20  184.2    3.23     1.96  1477.
  150   6.54  33.76     149   26.52  154.0    3.64     2.54  1478.
  175   6.33  33.82     174   26.60  146.6    4.01     3.16  1478.
  200   6.09  33.85     199   26.65  142.3    4.37     3.85  1477.
  225   5.80  33.86     223   26.70  137.9    4.73     4.61  1476.
  250   5.54  33.87     248   26.74  134.5    5.07     5.43  1476.
  300   4.96  33.88     298   26.81  127.6    5.72     7.27  1474.
  400   4.45  33.98     397   26.95  115.2    6.93    11.58  1474.
  500   4.16  34.06     496   27.04  107.0    8.04    16.67  1474.
  600   3.92  34.14     595   27.13   99.0    9.07    22.43  1475.
  800   3.39  34.26     793   27.28   85.9   10.91    35.53  1476.
 1000   3.03  34.35     991   27.39   76.6   12.53    50.34  1478.
 1200   2.73  34.42    1188   27.47   69.3   13.99    66.70  1480.
 1500   2.38  34.49    1484   27.55   61.8   15.95    93.55  1484.
 2000   1.97  34.57    1976   27.65   53.4   18.80   144.25  1491.

DEEPEST MEASUREMENT:

2008    1.97  34.57    1984   27.65   53.1   18.84   145.12  1491.
```



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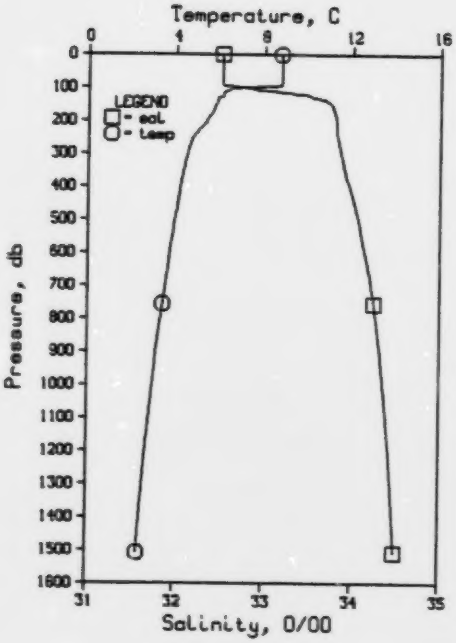
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 17          DATE  2/12/87
POSITION  48-34.8N, 140- 8.7W   GMT 10:26     STATION 0S03
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0   8.63  32.50      0    25.24  273.8   0.00    0.00  1482.
   10   8.63  32.49     10    25.24  274.1   0.27    0.01  1482.
   20   8.64  32.49     20    25.24  274.4   0.55    0.06  1482.
   30   8.64  32.49     30    25.24  274.7   0.82    0.13  1483.
   50   8.64  32.49     50    25.24  275.1   1.37    0.35  1483.
   75   8.64  32.49     75    25.24  275.3   2.06    0.79  1483.
  100   7.17  32.68     99    25.60  241.3   2.74    1.39  1478.
  125   5.84  33.49    124    26.40  165.1   3.23    1.96  1474.
  150   6.08  33.77    149    26.59  147.3   3.62    2.50  1476.
  175   5.82  33.81    174    26.66  141.2   3.98    3.10  1476.
  200   5.58  33.82    199    26.69  138.1   4.33    3.76  1475.
  225   5.17  33.82    223    26.74  133.4   4.67    4.50  1474.
  250   4.99  33.85    248    26.78  129.7   5.00    5.29  1473.
  300   4.57  33.88    298    26.86  122.7   5.63    7.06  1473.
  400   4.23  33.98    397    26.97  112.7   6.81   11.26  1473.
  500   4.06  34.08    496    27.07  104.6   7.89   16.23  1474.
  600   3.81  34.14    595    27.15   97.6   8.91   21.89  1475.
  800   3.37  34.26    793    27.29   85.5  10.72   34.83  1476.
 1000   2.99  34.36    991    27.40   75.5  12.33   49.51  1478.
 1200   2.69  34.43   1188    27.48   68.4  13.76   65.58  1480.
 1500   2.37  34.49   1484    27.56   61.5  15.71   92.37  1484.

DEEPEST MEASUREMENT:

1506    2.36   34.49   1490   27.56   61.4  15.75   92.93  1484.
```

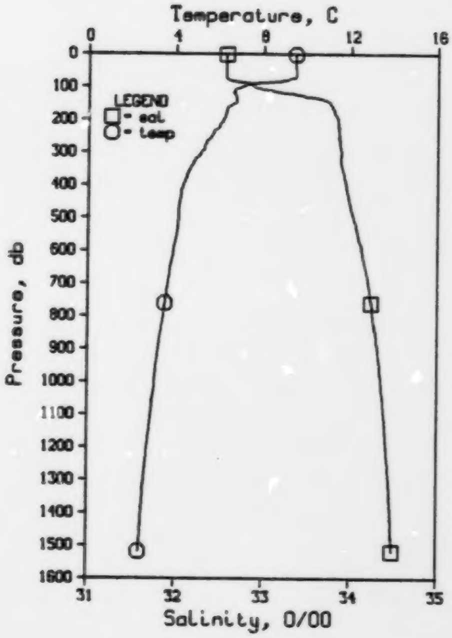


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 18          DATE  2/12/87
POSITION  48-34.8N, 139-20.0W   GMT 14:24     STATION 0S04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T              D       EN
    0   8.74  32.51      0    25.24  274.1   0.00    0.00  1483.
   10   8.74  32.52     10    25.24  274.1   0.27    0.01  1483.
   20   8.75  32.52     20    25.24  274.4   0.55    0.06  1483.
   30   8.75  32.52     30    25.24  274.5   0.82    0.13  1483.
   50   8.76  32.52     50    25.24  274.9   1.37    0.35  1483.
   75   8.76  32.52     75    25.24  275.4   2.06    0.79  1484.
  100   7.14  32.76     99    25.66  234.8   2.74    1.39  1478.
  125   6.08  33.50    124    26.38  166.6   3.23    1.95  1475.
  150   5.79  33.75    149    26.61  145.4   3.61    2.49  1475.
  175   5.63  33.79    174    26.66  140.7   3.97    3.08  1475.
  200   5.37  33.81    199    26.71  136.2   4.32    3.74  1474.
  225   5.07  33.81    223    26.75  132.8   4.65    4.47  1473.
  250   4.77  33.83    248    26.79  128.8   4.98    5.26  1473.
  300   4.51  33.87    298    26.85  123.4   5.61    7.02  1472.
  400   4.20  33.97    397    26.97  113.4   6.79   11.25  1473.
  500   3.95  34.07    496    27.07  103.8   7.88   16.23  1474.
  600   3.73  34.14    595    27.15   97.0   8.89   21.86  1474.
  800   3.33  34.27    793    27.30   84.5  10.69   34.71  1476.
 1000   3.00  34.36    991    27.40   75.7  12.29   49.30  1478.
 1200   2.67  34.43   1188    27.48   68.0  13.73   65.41  1480.
 1500   2.33  34.50   1484    27.56   60.7  15.66   91.89  1484.

DEEPEST MEASUREMENT:

1507    2.32   34.50   1491   27.57   60.5  15.70   92.54  1484.
```



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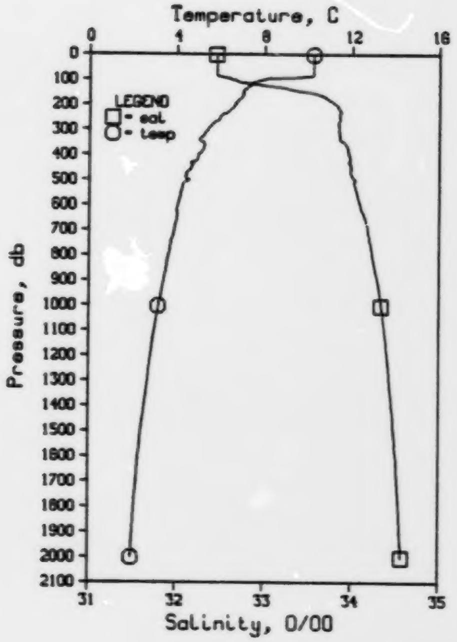
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 19          DATE  2/12/87
POSITION  48-34.8N, 138-31.3W    GMT 18:19    STATION 0505
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.   SOUND
                                T              D        EN
    0   9.43  32.57       0   25.17  280.2    0.00     0.00   1485.
   10   9.43  32.56      10   25.17  280.7    0.28     0.01   1485.
   20   9.43  32.56      20   25.17  281.0    0.56     0.06   1486.
   30   9.44  32.56      30   25.17  281.3    0.84     0.13   1486.
   50   9.44  32.56      50   25.17  281.7    1.41     0.36   1486.
   75   9.19  32.57      75   25.21  277.7    2.11     0.81   1485.
  100   7.00  32.88      99   25.78  224.0    2.73     1.36   1478.
  125   6.67  33.40     124   26.23  181.4    3.24     1.94   1478.
  150   6.68  33.75     149   26.50  156.4    3.66     2.52   1479.
  175   6.27  33.80     174   26.59  147.7    4.04     3.15   1477.
  200   6.14  33.84     199   26.64  143.1    4.40     3.84   1477.
  225   5.92  33.85     223   26.68  139.8    4.76     4.61   1477.
  250   5.62  33.86     248   26.72  136.0    5.10     5.45   1476.
  300   5.16  33.88     298   26.80  129.4    5.76     7.31   1475.
  400   4.33  33.94     397   26.93  116.7    6.99    11.69   1473.
  500   4.11  34.03     496   27.02  108.7    8.12    16.85   1474.
  600   3.89  34.13     595   27.13   99.8    9.16    22.69   1475.
  800   3.45  34.25     793   27.27   87.2   11.02    35.88   1477.
 1000   3.05  34.35     991   27.39   76.8   12.64    50.75   1478.
 1200   2.73  34.42    1188   27.47   69.5   14.11    67.14   1480.
 1500   2.40  34.49    1484   27.55   62.3   16.07    94.08   1484.

DEEPEST MEASUREMENT:

1519    2.37  34.49    1503   27.56   61.6   16.19    95.89   1484.
```



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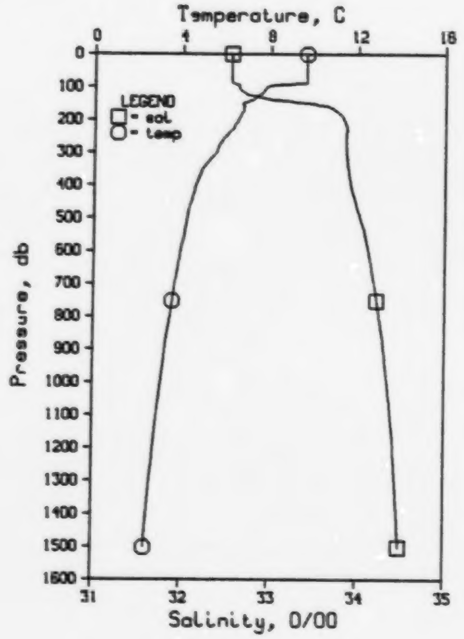
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 20          DATE  2/12/87
POSITION  48-34.8N, 137-42.6W    GMT 22:24    STATION 0506
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.   SOUND
                                T              D        EN
    0  10.19  32.44       0   24.95  301.3    0.00     0.00   1488.
   10  10.19  32.45      10   24.96  301.1    0.30     0.02   1488.
   20  10.19  32.45      20   24.95  301.4    0.60     0.06   1488.
   30  10.19  32.45      30   24.95  301.6    0.90     0.14   1488.
   50  10.19  32.45      50   24.95  301.9    1.51     0.38   1489.
   75  10.19  32.45      75   24.95  302.5    2.26     0.87   1489.
  100   7.95  32.61      99   25.43  257.2    2.99     1.51   1481.
  125   7.33  33.00     124   25.82  220.4    3.59     2.20   1480.
  150   7.03  33.46     149   26.22  182.5    4.09     2.89   1480.
  175   6.89  33.69     174   26.42  163.9    4.51     3.60   1480.
  200   6.64  33.81     199   26.55  152.3    4.91     4.35   1479.
  225   6.35  33.86     224   26.63  144.9    5.28     5.16   1479.
  250   5.93  33.85     248   26.68  140.4    5.64     6.02   1477.
  300   5.40  33.84     298   26.74  135.2    6.33     7.95   1476.
  400   4.97  33.96     397   26.87  122.8    7.62    12.55   1476.
  500   4.54  34.03     496   26.98  113.0    8.79    17.94   1476.
  600   4.04  34.09     595   27.08  104.3    9.88    24.00   1476.
  800   3.62  34.23     793   27.23   90.7   11.81    37.77   1477.
 1000   3.18  34.33     991   27.36   79.4   13.51    53.27   1479.
 1200   2.83  34.41    1188   27.45   71.2   15.01    70.09   1481.
 1500   2.39  34.49    1484   27.55   62.3   17.02    97.64   1484.
 2000   1.96  34.57    1976   27.65   53.2   19.88   148.47   1491.

DEEPEST MEASUREMENT:

2002    1.96  34.57    1978   27.65   53.0   19.89   148.69   1491.
```



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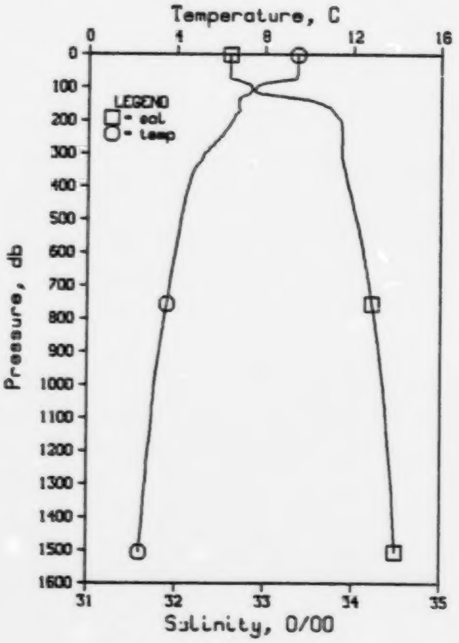
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 21          DATE  3/12/87
POSITION   48- 2.4N, 137-43.6W   GMT   2:43     STATION OS12
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS    TEMP     SAL   DEPTH    SIGMA    SVA    DELTA     POT.   SOUND
                                   T               D        EN
    0    9.61   32.54       0    25.12   284.8    0.00     0.00   1486.
   10    9.60   32.55      10    25.13   284.8    0.29     0.01   1486.
   20    9.61   32.54      20    25.12   285.4    0.57     0.06   1486.
   30    9.61   32.54      30    25.12   285.6    0.86     0.13   1486.
   50    9.62   32.54      50    25.12   286.1    1.43     0.36   1487.
   75    9.62   32.54      75    25.12   286.6    2.14     0.82   1487.
  100    7.80   32.62      99    25.46   254.2    2.83     1.43   1481.
  125    7.48   32.74     124    25.60   241.5    3.46     2.15   1480.
  150    6.71   33.41     149    26.23   181.7    4.00     2.90   1478.
  175    6.71   33.75     174    26.49   157.1    4.41     3.59   1479.
  200    6.49   33.83     199    26.59   148.7    4.79     4.31   1479.
  225    6.29   33.86     224    26.64   144.0    5.16     5.10   1478.
  250    5.93   33.86     248    26.68   140.2    5.51     5.96   1477.
  300    5.51   33.86     298    26.74   135.2    6.20     7.88   1476.
  400    4.60   33.91     397    26.88   121.9    7.47    12.43   1474.
  500    4.21   34.02     496    27.01   110.0    8.63    17.74   1475.
  600    3.92   34.12     595    27.11   100.9    9.69    23.63   1475.
  800    3.47   34.24     793    27.26    87.9   11.56    36.99   1477.
 1000    3.08   34.35     991    27.38    77.4   13.21    52.06   1478.
 1200    2.76   34.42    1188    27.47    69.3   14.68    68.47   1480.
 1500    2.38   34.49    1484    27.55    61.8   16.64    95.46   1484.

DEEPEST MEASUREMENT:

1503     2.37   34.49    1487    27.56    61.7  16.66    95.74   1484.
```

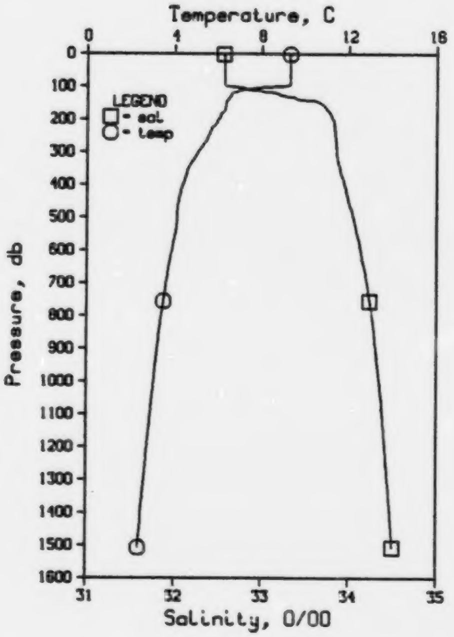


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 22          DATE  3/12/87
POSITION   48- 2.4N, 138-31.8W   GMT   6:42     STATION OS11
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS    TEMP     SAL   DEPTH    SIGMA    SVA    DELTA     POT.   SOUND
                                   T               D        EN
    0    9.45   32.60       0    25.19   278.4    0.00     0.00   1485.
   10    9.46   32.60      10    25.19   278.6    0.28     0.01   1485.
   20    9.45   32.60      20    25.19   278.9    0.56     0.06   1486.
   30    9.45   32.60      30    25.19   279.0    0.84     0.13   1486.
   50    9.44   32.60      50    25.19   279.4    1.39     0.36   1486.
   75    9.30   32.61      75    25.22   276.6    2.09     0.80   1486.
  100    7.58   32.84      99    25.66   235.3    2.72     1.35   1480.
  125    7.05   33.10     124    25.94   208.7    3.28     2.00   1479.
  150    6.79   33.64     149    26.40   165.8    3.74     2.64   1479.
  175    6.75   33.77     174    26.51   155.7    4.14     3.30   1479.
  200    6.49   33.85     199    26.61   146.8    4.52     4.02   1479.
  225    6.26   33.87     223    26.65   143.2    4.88     4.81   1478.
  250    5.96   33.87     248    26.69   139.4    5.23     5.66   1477.
  300    5.24   33.87     298    26.77   131.6    5.91     7.56   1475.
  400    4.55   33.94     397    26.91   118.9    7.16    12.01   1474.
  500    4.20   34.04     496    27.02   109.0    8.29    17.21   1475.
  600    3.96   34.12     595    27.11   101.2    9.34    23.08   1475.
  800    3.47   34.24     793    27.26    87.8   11.23    36.51   1477.
 1000    3.04   34.35     991    27.38    77.1   12.88    51.58   1478.
 1200    2.76   34.41    1188    27.46    70.2   14.35    68.11   1480.
 1500    2.39   34.49    1484    27.55    62.0   16.33    95.25   1484.

DEEPEST MEASUREMENT:

1506     2.38   34.49    1490    27.55    61.8  16.37    95.82   1484.
```

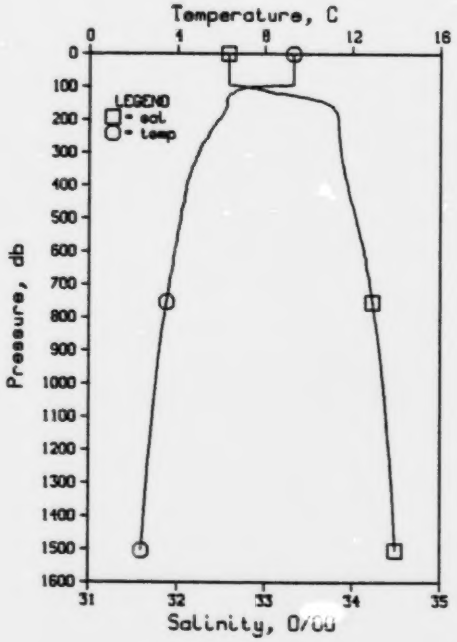


```
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 23          DATE  3/12/87
POSITION  48- 2.4N, 139-20.0W    GMT 11:32     STATION OS10
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.   SOUND
                                T              D       EN
   0    9.28   32.55     0    25.18   279.2   0.00    0.00   1485.
  10    9.27   32.56    10    25.19   278.6   0.28    0.01   1485.
  20    9.29   32.56    20    25.19   279.0   0.56    0.06   1485.
  30    9.29   32.56    30    25.19   279.2   0.84    0.13   1485.
  50    9.29   32.56    50    25.19   279.6   1.40    0.36   1485.
  75    9.29   32.56    75    25.19   280.1   2.10    0.80   1486.
 100    8.66   32.63    99    25.34   266.2   2.79    1.42   1484.
 125    6.55   33.21   124    26.09   194.8   3.35    2.06   1477.
 150    6.32   33.66   149    26.48   158.1   3.79    2.67   1477.
 175    6.24   33.76   174    26.57   149.9   4.17    3.31   1477.
 200    5.97   33.81   199    26.64   143.2   4.54    4.01   1477.
 225    5.68   33.83   223    26.69   138.5   4.89    4.77   1476.
 250    5.52   33.84   248    26.72   136.4   5.24    5.60   1476.
 300    5.04   33.85   298    26.79   130.2   5.90    7.47   1475.
 400    4.35   33.94   397    26.93   116.7   7.14   11.86   1473.
 500    4.09   34.05   496    27.04   107.0   8.25   16.96   1474.
 600    3.86   34.13   595    27.13    99.1   9.28   22.74   1475.
 800    3.38   34.26   793    27.28    85.7  11.12   35.81   1476.
1000    3.05   34.35   991    27.38    77.0  12.74   50.66   1478.
1200    2.75   34.41  1188    27.46    70.1  14.21   67.08   1480.
1500    2.36   34.50  1484    27.56    60.9  16.17   93.97   1484.

DEEPEST MEASUREMENT:

1507    2.35   34.50  1491    27.57    60.5  16.21   94.62   1484.
```



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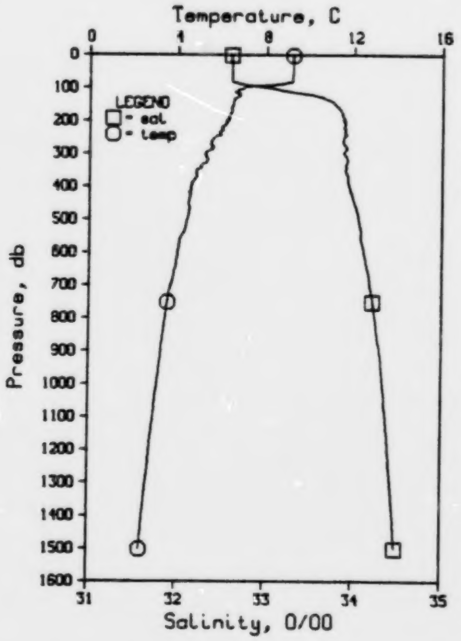
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 24          DATE  3/12/87
POSITION  48- 2.4N, 140- 8.2W    GMT 16: 8     STATION OS09
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.   SOUND
                                T              D       EN
   0    9.29   32.58     0    25.20   277.6   0.00    0.00   1485.
  10    9.29   32.58    10    25.20   277.7   0.28    0.01   1485.
  20    9.30   32.58    20    25.20   278.1   0.56    0.06   1485.
  30    9.30   32.58    30    25.20   278.2   0.83    0.13   1485.
  50    9.30   32.58    50    25.20   278.6   1.39    0.35   1486.
  75    9.30   32.58    75    25.20   279.0   2.09    0.80   1486.
 100    7.37   32.76    99    25.63   237.8   2.78    1.41   1479.
 125    6.34   33.29   124    26.18   185.9   3.30    2.02   1476.
 150    6.22   33.69   149    26.52   154.4   3.72    2.60   1477.
 175    6.10   33.81   174    26.62   144.8   4.10    3.22   1477.
 200    5.86   33.83   199    26.67   140.2   4.45    3.90   1476.
 225    5.58   33.84   223    26.71   136.9   4.80    4.65   1476.
 250    5.39   33.85   248    26.74   134.3   5.14    5.47   1475.
 300    4.94   33.87   298    26.81   128.0   5.79    7.30   1474.
 400    4.39   33.95   397    26.93   116.8   7.02   11.67   1474.
 500    4.14   34.04   496    27.03   108.1   8.15   16.85   1474.
 600    3.87   34.13   595    27.13    99.2   9.18   22.65   1475.
 800    3.40   34.25   793    27.27    86.5  11.03   35.80   1476.
1000    3.01   34.35   991    27.39    76.5  12.65   50.59   1478.
1200    2.71   34.42  1188    27.47    69.4  14.11   66.93   1480.
1500    2.37   34.49  1484    27.56    61.6  16.07   93.83   1484.

DEEPEST MEASUREMENT:

1504    2.36   34.49  1488    27.56    61.6  16.09   94.21   1484.
```



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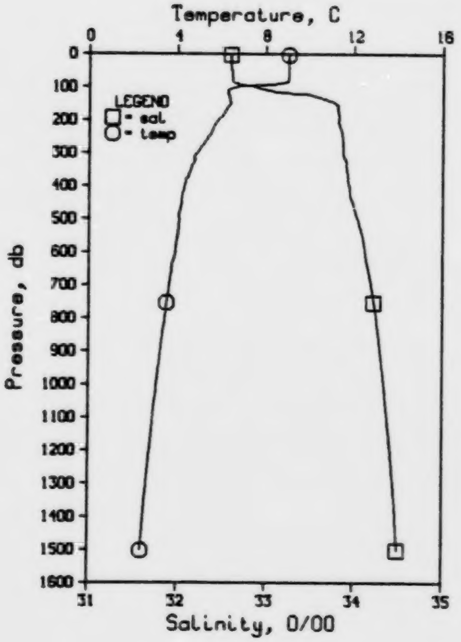
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 25           DATE  3/12/87
POSITION  48- 2.4N, 140-56.4W    GMT 20:41     STATION 0S08
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.   SOUND
                                T              D        EN
    0   9.18   32.60      0   25.23  274.5   0.00     0.00   1484.
   10   9.18   32.59     10   25.23  275.0   0.27     0.01   1484.
   20   9.18   32.59     20   25.23  275.0   0.55     0.06   1485.
   30   9.18   32.59     30   25.23  275.1   0.82     0.13   1485.
   50   9.18   32.60     50   25.24  275.2   1.38     0.35   1485.
   75   9.16   32.60     75   25.24  275.3   2.06     0.79   1485.
  100   6.91   33.01     99   25.89  213.8   2.70     1.36   1478.
  125   6.75   33.57    124   26.35  169.9   3.18     1.90   1478.
  150   6.44   33.78    149   26.55  150.9   3.58     2.45   1478.
  175   6.36   33.85    174   26.62  144.7   3.94     3.07   1478.
  200   6.22   33.89    199   26.67  140.2   4.30     3.75   1478.
  225   6.00   33.90    223   26.70  137.7   4.65     4.50   1477.
  250   5.68   33.88    248   26.73  135.2   4.99     5.33   1476.
  300   5.23   33.88    298   26.79  130.2   5.65     7.19   1475.
  400   4.59   33.95    397   26.91  119.2   6.91    11.64   1474.
  500   4.42   34.05    496   27.01  110.3   8.05    16.89   1475.
  600   3.99   34.11    595   27.11  101.8   9.11    22.83   1475.
  800   3.46   34.24    793   27.26   88.0  11.00    36.24   1477.
 1000   3.11   34.34    991   27.37   78.4  12.66    51.43   1479.
 1200   2.79   34.41   1188   27.45   71.0  14.15    68.14   1481.
 1500   2.38   34.49   1484   27.55   61.9  16.14    95.48   1484.

DEEPEST MEASUREMENT:

1502    2.38   34.49   1486   27.55   61.9  16.15    95.67   1484.
```



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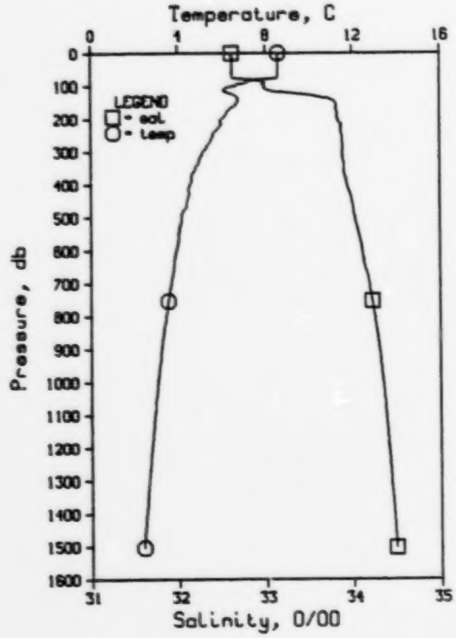
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 26           DATE  4/12/87
POSITION  48- 2.4N, 141-44.8W    GMT  1:34     STATION 0S07
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.   SOUND
                                T              D        EN
    0   9.02   32.60      0   25.26  271.8   0.00     0.00   1484.
   10   9.01   32.60     10   25.26  271.9   0.27     0.01   1484.
   20   9.02   32.60     20   25.26  272.3   0.54     0.06   1484.
   30   9.01   32.60     30   25.26  272.4   0.82     0.12   1484.
   50   9.03   32.61     50   25.27  272.2   1.36     0.35   1485.
   75   9.01   32.61     75   25.27  272.0   2.04     0.78   1485.
  100   6.68   32.87     99   25.81  221.1   2.69     1.35   1477.
  125   6.29   33.53    124   26.37  167.7   3.18     1.92   1476.
  150   6.38   33.79    149   26.57  149.4   3.58     2.47   1477.
  175   6.13   33.82    174   26.63  144.1   3.94     3.08   1477.
  200   5.81   33.83    199   26.67  140.3   4.30     3.76   1476.
  225   5.59   33.85    223   26.72  136.3   4.65     4.51   1476.
  250   5.35   33.87    248   26.76  132.3   4.98     5.32   1475.
  300   4.87   33.88    298   26.82  126.7   5.63     7.14   1474.
  400   4.31   33.95    397   26.94  116.1   6.84    11.44   1473.
  500   4.07   34.04    496   27.04  107.2   7.96    16.56   1474.
  600   3.89   34.13    595   27.12   99.9   8.99    22.34   1475.
  800   3.43   34.25    793   27.27   86.8  10.84    35.55   1477.
 1000   3.06   34.34    991   27.38   77.5  12.49    50.58   1478.
 1200   2.76   34.42   1188   27.47   69.7  13.96    67.08   1480.
 1500   2.38   34.50   1484   27.56   61.3  15.92    93.98   1484.

DEEPEST MEASUREMENT:

1502    2.37   34.50   1486   27.56   61.2  15.93    94.17   1484.
```



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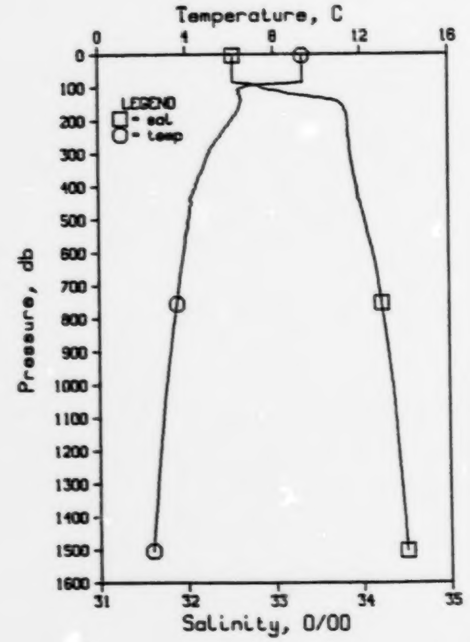
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 27          DATE  4/12/87
POSITION   47-30.0N, 141-43.3W    GMT  5:41    STATION OS13
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0   8.57  32.61       0   25.34  264.4    0.00     0.00  1482.
   10   8.56  32.61      10   25.34  264.4    0.26     0.01  1482.
   20   8.57  32.61      20   25.34  264.6    0.53     0.05  1482.
   30   8.57  32.61      30   25.34  264.8    0.79     0.12  1482.
   50   8.58  32.61      50   25.34  265.2    1.32     0.34  1483.
   75   8.56  32.62      75   25.35  264.9    1.99     0.76  1483.
  100   6.60  32.99      99   25.91  211.0    2.55     1.26  1476.
  125   6.47  33.42     124   26.27  177.8    3.05     1.83  1477.
  150   6.67  33.80     149   26.54  152.2    3.46     2.40  1479.
  175   6.28  33.82     174   26.61  146.1    3.83     3.02  1477.
  200   5.99  33.83     199   26.66  141.9    4.19     3.71  1477.
  225   5.88  33.87     223   26.70  137.9    4.54     4.47  1477.
  250   5.59  33.88     248   26.74  134.2    4.88     5.29  1476.
  300   5.13  33.88     298   26.80  129.0    5.54     7.14  1475.
  400   4.53  33.94     397   26.91  119.3    6.78    11.56  1474.
  500   4.15  34.03     496   27.02  109.1    7.93    16.79  1474.
  600   3.92  34.11     595   27.11  101.4    8.98    22.67  1475.
  800   3.43  34.25     793   27.27   87.0   10.85    36.02  1477.
 1000   3.05  34.34     991   27.38   77.3   12.49    50.99  1478.
 1200   2.76  34.41    1188   27.46   70.3   13.96    67.52  1480.
 1500   2.38  34.49    1484   27.56   61.8   15.94    94.68  1484.

DEEPEST MEASUREMENT:

1505    2.38  34.49    1489   27.56   61.7  15.97    95.15  1484.
```



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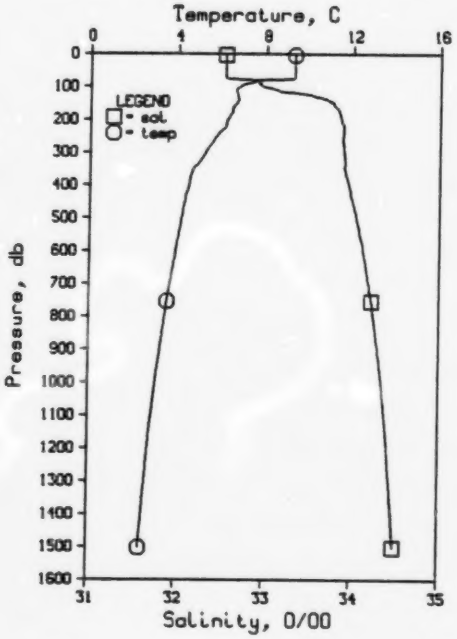
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 28          DATE  4/12/87
POSITION   47-30.0N, 140-55.5W    GMT  9:52    STATION OS14
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA     POT.  SOUND
                                T              D        EN
    0   9.32  32.53       0   25.16  281.2    0.00     0.00  1485.
   10   9.32  32.53      10   25.16  281.5    0.28     0.01  1485.
   20   9.32  32.53      20   25.16  281.8    0.56     0.06  1485.
   30   9.33  32.53      30   25.16  282.0    0.84     0.13  1485.
   50   9.34  32.53      50   25.16  282.6    1.41     0.36  1486.
   75   9.34  32.53      75   25.16  282.9    2.12     0.81  1486.
  100   6.66  32.85      99   25.79  222.7    2.76     1.38  1477.
  125   6.48  33.33     124   26.20  184.4    3.27     1.97  1477.
  150   6.47  33.78     149   26.55  151.2    3.68     2.54  1478.
  175   6.33  33.84     174   26.62  145.5    4.05     3.15  1478.
  200   6.08  33.85     199   26.66  141.8    4.41     3.84  1477.
  225   5.76  33.86     223   26.70  137.7    4.76     4.59  1476.
  250   5.54  33.86     248   26.73  135.0    5.10     5.42  1476.
  300   5.02  33.88     298   26.81  127.8    5.76     7.25  1475.
  400   4.44  33.95     397   26.93  117.1    6.98    11.62  1474.
  500   4.09  34.04     496   27.04  107.5    8.10    16.76  1474.
  600   3.86  34.13     595   27.13   99.0    9.14    22.54  1475.
  800   3.42  34.25     793   27.27   86.8   10.99    35.70  1477.
 1000   3.04  34.35     991   27.38   76.8   12.62    50.67  1478.
 1200   2.75  34.41    1188   27.46   70.1   14.09    67.12  1480.
 1500   2.39  34.49    1484   27.56   61.7   16.06    94.17  1484.

DEEPEST MEASUREMENT:

1504    2.38  34.49    1488   27.56   61.5  16.09   ' 94.55  1484.
```



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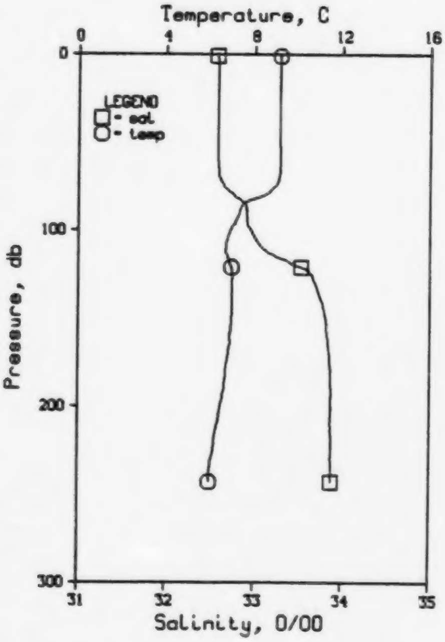
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 29          DATE  4/12/87
POSITION  47-30.0N, 140- 7.8W    GMT 14:11     STATION OS15
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0   9.26  32.53      0   25.17  280.7   0.00    0.00  1484.
   10   9.27  32.53     10   25.17  280.9   0.28    0.01  1485.
   20   9.27  32.53     20   25.17  281.1   0.56    0.06  1485.
   30   9.27  32.53     30   25.17  281.4   0.84    0.13  1485.
   50   9.27  32.53     50   25.17  281.6   1.41    0.36  1485.
   75   9.20  32.56     75   25.20  279.1   2.11    0.81  1486.
  100   6.78  32.96     99   25.87  215.7   2.69    1.32  1477.
  125   6.66  33.50    124   26.31  174.0   3.18    1.89  1478.
  150   6.64  33.77    149   26.52  154.4   3.59    2.46  1478.
  175   6.45  33.83    174   26.59  147.5   3.97    3.08  1478.
  200   6.21  33.86    199   26.65  142.9   4.33    3.77  1478.
  225   6.11  33.89    223   26.68  139.7   4.68    4.54  1478.
  250   5.76  33.88    248   26.72  136.1   5.03    5.37  1477.
  300   5.25  33.90    298   26.79  129.6   5.69    7.23  1475.
  400   4.52  33.95    397   26.92  117.8   6.93   11.63  1474.
  500   4.18  34.04    496   27.03  108.5   8.06   16.81  1474.
  600   3.93  34.12    595   27.12  100.7   9.10   22.66  1475.
  800   3.46  34.24    793   27.26   88.0  10.98   36.02  1477.
 1000   3.06  34.34    991   27.38   77.5  12.63   51.15  1478.
 1200   2.74  34.42   1188   27.46   69.8  14.10   67.59  1480.
 1500   2.38  34.49   1484   27.56   61.4  16.07   94.57  1484.

DEEPEST MEASUREMENT:

1503    2.38  34.50   1487   27.56   61.3  16.09   94.85  1484.
```



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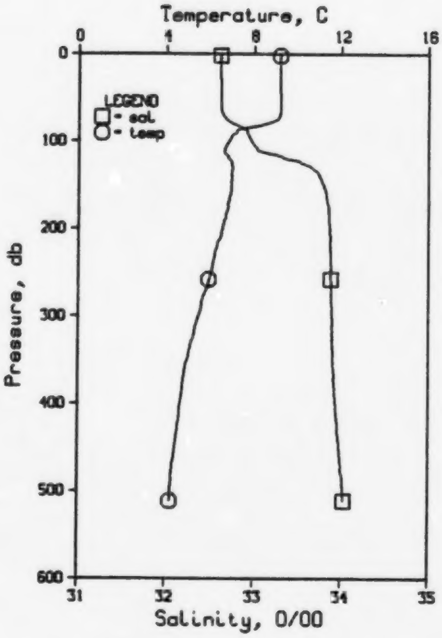
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 30          DATE  5/12/87
POSITION  47-30.0N, 139-43.9W    GMT  4:54     STATION OS31
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA   SVA   DELTA    POT.  SOUND
                                T             D       EN
    0   9.13  32.57      0   25.22  275.5   0.00    0.00  1484.
   10   9.13  32.58     10   25.23  275.0   0.28    0.01  1484.
   20   9.13  32.58     20   25.23  275.1   0.55    0.06  1484.
   30   9.14  32.58     30   25.23  275.4   0.83    0.13  1485.
   50   9.14  32.58     50   25.23  275.8   1.38    0.35  1485.
   75   8.93  32.65     75   25.32  267.8   2.06    0.79  1485.
  100   6.90  32.96     99   25.85  217.2   2.65    1.31  1478.
  125   6.98  33.64    124   26.38  167.7   3.14    1.87  1479.
  150   6.95  33.81    149   26.51  155.4   3.54    2.43  1480.
  175   6.74  33.85    174   26.58  149.5   3.92    3.06  1479.
  200   6.44  33.87    199   26.63  144.8   4.29    3.77  1479.
  225   6.13  33.87    223   26.67  141.1   4.65    4.54  1478.

DEEPEST MEASUREMENT:

 243    5.97  33.88    241   26.69  139.0   4.90    5.14  1477.
```



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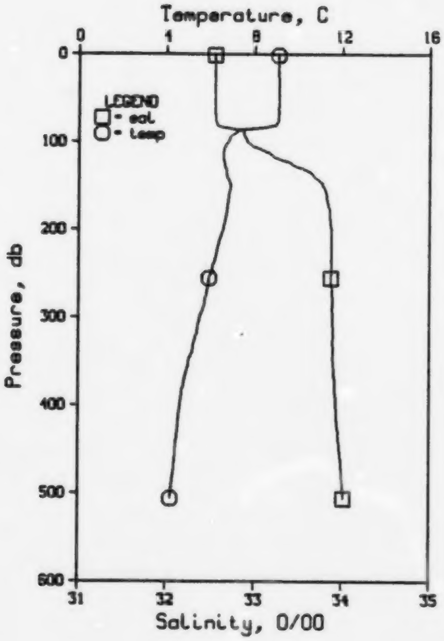
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 31        DATE  5/12/87
POSITION  47-30.0N, 139-43.9W   GMT 10: 4    STATION OS31
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T             D       EN
    0   9.15  32.61       0   25.25  273.2   0.00    0.00  1484.
   10   9.16  32.61      10   25.25  273.4   0.27    0.01  1484.
   20   9.16  32.61      20   25.25  273.5   0.55    0.06  1485.
   30   9.17  32.61      30   25.25  273.6   0.82    0.13  1485.
   50   9.17  32.61      50   25.25  273.9   1.37    0.35  1485.
   75   9.05  32.68      75   25.32  267.8   2.05    0.78  1485.
  100   6.84  32.96      99   25.86  216.2   2.64    1.30  1477.
  125   6.97  33.54     124   26.29  175.4   3.13    1.87  1479.
  150   6.93  33.79     149   26.50  156.6   3.54    2.44  1480.
  175   6.81  33.85     174   26.56  150.8   3.93    3.08  1480.
  200   6.56  33.87     199   26.61  146.8   4.30    3.79  1479.
  225   6.24  33.87     223   26.65  142.5   4.66    4.57  1478.
  250   6.04  33.88     248   26.68  140.1   5.01    5.43  1478.
  300   5.47  33.89     298   26.76  132.7   5.69    7.34  1476.
  400   4.66  33.93     397   26.89  121.0   6.96   11.83  1475.
  500   4.22  34.03     496   27.01  110.2   8.11   17.13  1475.

DEEPEST MEASUREMENT:

 511    4.20  34.03     507   27.02  109.6   8.23   17.75  1475.
```



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OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 32        DATE  5/12/87
POSITION  47-46.2N, 139-20.0W   GMT 12:35    STATION OS34
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

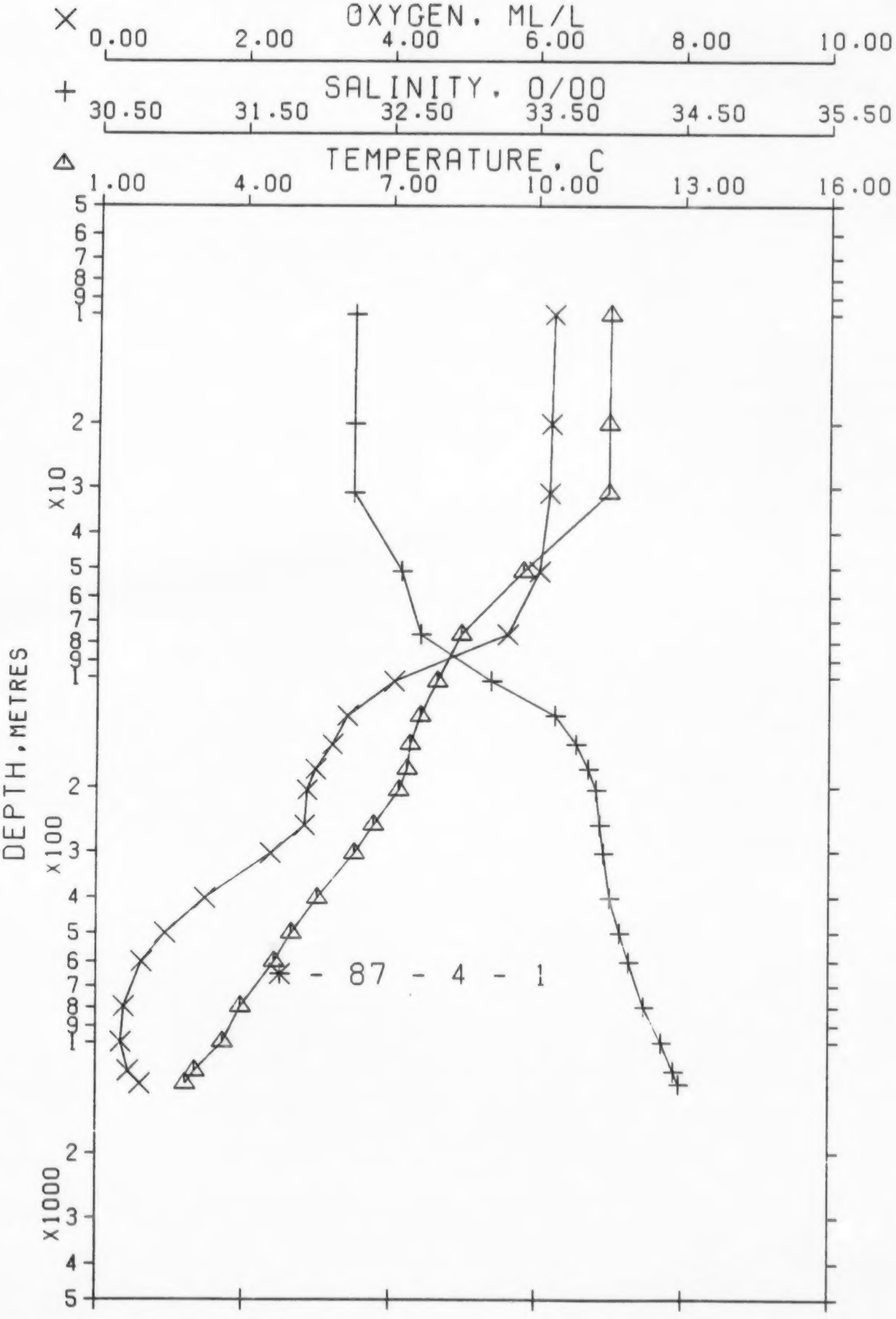
PRESS   TEMP    SAL   DEPTH   SIGMA    SVA   DELTA    POT.  SOUND
                                T             D       EN
    0   9.06  32.54       0   25.21  276.7   0.00    0.00  1484.
   10   9.06  32.54      10   25.21  277.0   0.28    0.01  1484.
   20   9.06  32.54      20   25.21  277.1   0.55    0.06  1484.
   30   9.07  32.54      30   25.21  277.2   0.83    0.13  1484.
   50   9.07  32.54      50   25.21  277.7   1.39    0.35  1485.
   75   9.05  32.55      75   25.22  277.1   2.08    0.80  1485.
  100   6.77  32.92      99   25.83  218.6   2.69    1.33  1477.
  125   6.62  33.42     124   26.25  179.6   3.19    1.90  1478.
  150   6.88  33.78     149   26.49  157.0   3.60    2.48  1479.
  175   6.75  33.85     174   26.57  150.2   3.98    3.11  1479.
  200   6.57  33.87     199   26.61  146.2   4.35    3.82  1479.
  225   6.28  33.88     223   26.65  142.6   4.71    4.60  1478.
  250   6.01  33.87     248   26.68  139.9   5.07    5.46  1478.
  300   5.52  33.89     298   26.76  133.4   5.75    7.37  1477.
  400   4.63  33.93     397   26.89  120.8   7.02   11.90  1475.
  500   4.21  34.01     496   27.00  111.0   8.18   17.21  1475.

DEEPEST MEASUREMENT:

 506    4.19  34.02     502   27.01  110.3   8.25   17.55  1475.
```

Table 7

Hydrographic data taken during Cruise III.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2.00
4.00
6.00
8.00
10.00
+ SALINITY, 0/00
30.50
31.50
32.50
33.50
34.50
35.50
△ TEMPERATURE, C
1.00
4.00
7.00
10.00
13.00
16.00
DEPTH, METRES
X10
X100
X1000
5
6
7
8
9
1
2
3
4
* - 87 - 4 - 1

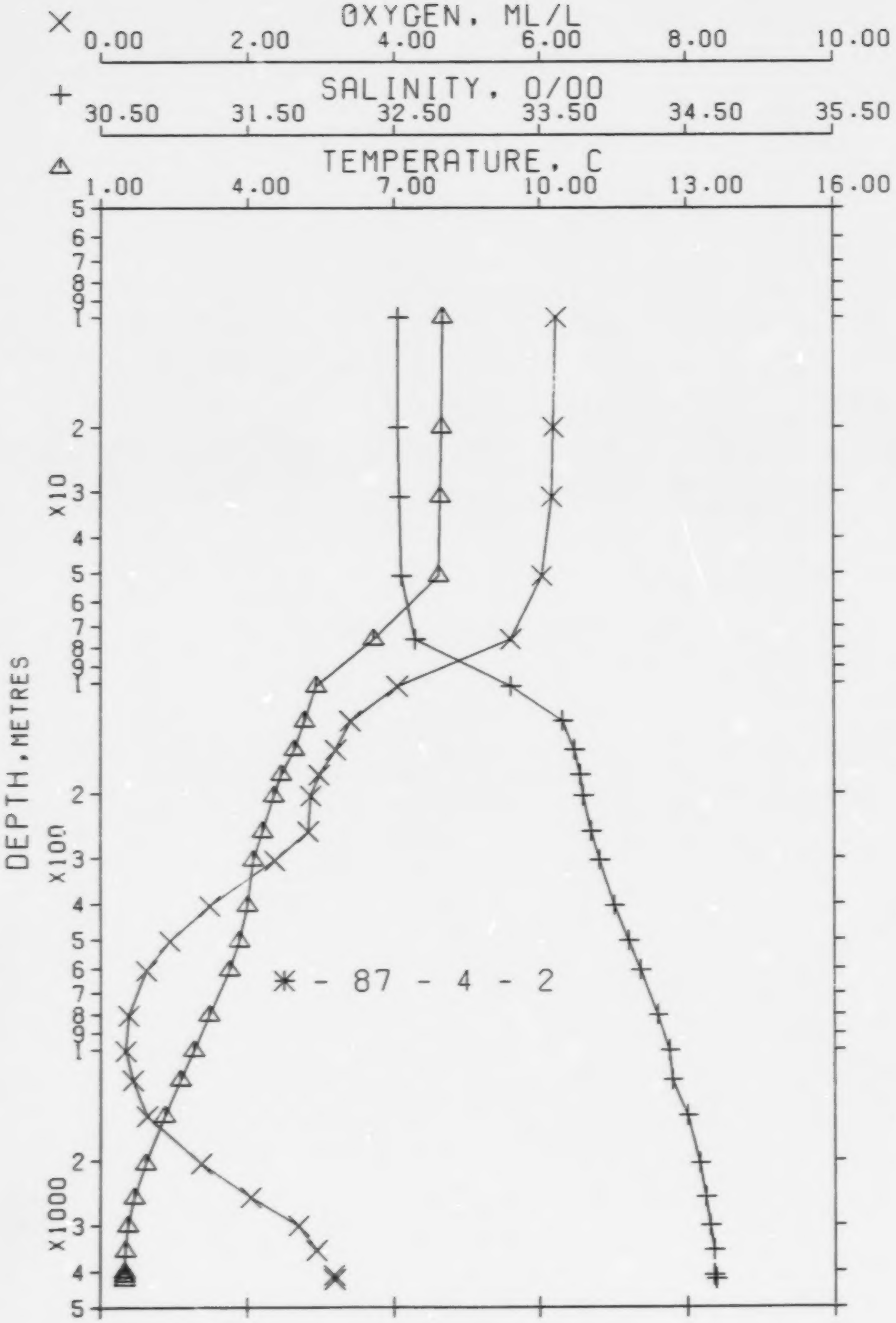
OCEAN PHYSICS GROUP
REFERENCE NO. 87-04- 1 DATE 25/11/87 GMT 19: 6
POSITION 48-38.5 N 126-39.1 W STATION MP04
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.47	32.243	0	24.571	337.5	11.47	337.5	0.00	0.00	6.19	1492.
10	11.48	32.242	10	24.569	338.0	11.48	337.7	0.34	0.02	6.22	1492.
20	11.46	32.241	20	24.571	337.9	11.46	337.4	0.68	0.07	6.19	1492.
31	11.46	32.241	31	24.571	338.1	11.46	337.4	1.05	0.17	6.17	1493.
51	9.72	32.569	51	25.125	285.7	9.71	284.7	1.68	0.43	6.03	1487.
76	8.46	32.702	76	25.427	257.3	8.45	256.0	2.36	0.87	5.61	1483.
103	7.96	33.195	102	25.886	214.0	7.95	212.2	2.98	1.43	4.05	1482.
128	7.61	33.627	127	26.275	177.4	7.60	175.3	3.47	2.01	3.41	1482.
153	7.40	33.771	152	26.418	164.3	7.39	161.7	3.90	2.62	3.20	1481.
179	7.34	33.856	178	26.493	157.5	7.32	154.5	4.32	3.33	2.98	1482.
204	7.17	33.908	203	26.558	151.7	7.15	148.4	4.71	4.09	2.86	1482.
255	6.65	33.936	253	26.651	143.4	6.63	139.5	5.45	5.83	2.84	1480.
305	6.26	33.959	303	26.720	137.3	6.23	132.9	6.16	7.84	2.38	1480.
405	5.51	34.006	402	26.850	125.6	5.48	120.5	7.47	12.59	1.49	1478.
505	4.98	34.073	501	26.966	115.4	4.94	109.5	8.67	18.17	0.95	1478.
605	4.63	34.137	600	27.056	107.5	4.58	100.9	9.78	24.46	0.63	1478.
804	3.95	34.240	797	27.210	93.7	3.89	86.2	11.78	38.76	0.39	1479.
1004	3.59	34.361	995	27.342	82.2	3.52	73.6	13.54	54.92	0.34	1481.
1206	3.02	34.444	1194	27.462	70.9	2.93	62.2	15.08	72.27	0.45	1482.
1307	2.83	34.479	1294	27.507	66.7	2.74	57.9	15.78	81.20	0.61	1483.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.47	32.243	0	24.571	337.5	11.47	337.5	0.00	0.00	6.19	1492.
10	11.48	32.242	10	24.569	338.0	11.48	337.7	0.34	0.02	6.22	1492.
20	11.46	32.241	20	24.571	337.9	11.46	337.4	0.68	0.07	6.19	1492.
30	11.46	32.241	30	24.571	338.1	11.46	337.4	1.01	0.16	6.17	1493.
50	9.81	32.552	50	25.098	288.3	9.80	287.3	1.64	0.41	6.04	1487.
75	8.52	32.696	75	25.413	258.6	8.51	257.3	2.32	0.84	5.63	1483.
100	8.00	33.152	99	25.846	217.8	7.99	216.0	2.92	1.37	4.18	1482.
125	7.64	33.584	124	26.236	181.1	7.63	179.0	3.42	1.94	3.47	1482.
150	7.42	33.755	149	26.403	165.7	7.41	163.2	3.85	2.54	3.23	1482.
175	7.35	33.843	174	26.482	158.5	7.33	155.6	4.25	3.21	3.01	1482.
200	7.20	33.900	199	26.547	152.7	7.18	149.4	4.64	3.95	2.88	1482.
225	6.94	33.920	223	26.599	148.1	6.92	144.5	5.02	4.77	2.85	1481.
250	6.69	33.934	248	26.643	144.1	6.67	140.3	5.38	5.65	2.84	1481.
300	6.30	33.957	298	26.713	137.9	6.27	133.5	6.08	7.63	2.42	1480.
400	5.54	34.004	397	26.845	126.1	5.51	121.0	7.41	12.33	1.52	1478.
500	5.00	34.070	496	26.961	115.8	4.96	110.0	8.61	17.87	0.97	1478.
600	4.65	34.134	595	27.052	107.8	4.60	101.3	9.73	24.13	0.64	1478.
700	4.28	34.190	694	27.135	100.3	4.23	93.3	10.77	31.02	0.50	1478.
800	3.96	34.238	793	27.207	93.9	3.90	86.5	11.74	38.44	0.40	1479.
900	3.77	34.301	892	27.277	87.8	3.70	79.8	12.65	46.31	0.37	1480.
1000	3.60	34.359	991	27.339	82.4	3.52	73.8	13.50	54.55	0.34	1481.
1200	3.04	34.442	1188	27.459	71.2	2.95	62.5	15.04	71.76	0.44	1482.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2.00
4.00
6.00
8.00
10.00
+ SALINITY, 0/00
30.50
31.50
32.50
33.50
34.50
35.50
△ TEMPERATURE, C
1.00
4.00
7.00
10.00
13.00
16.00
DEPTH, METRES
X10
X100
X1000
✱ - 87 - 4 - 2

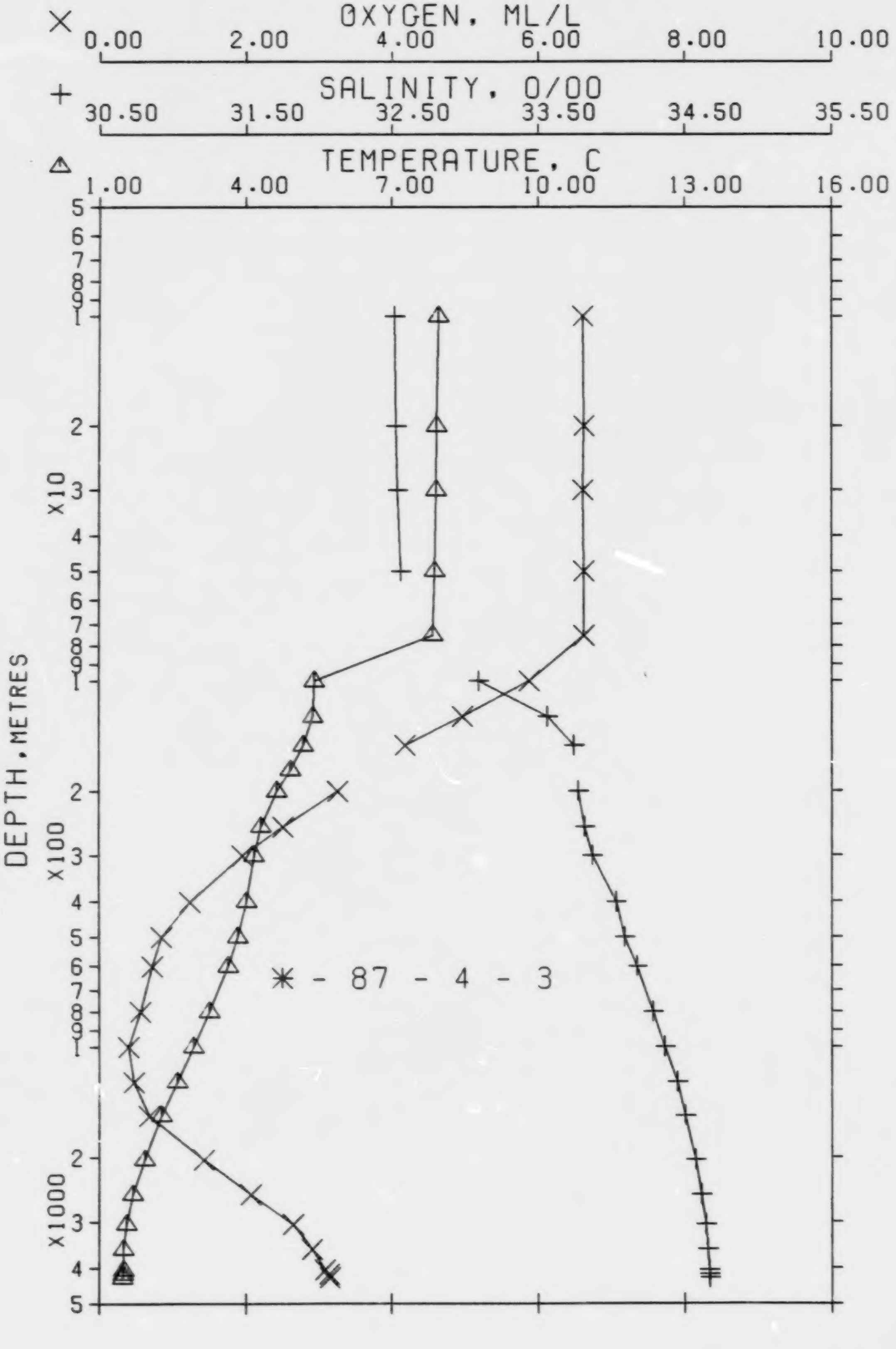
OCEAN PHYSICS GROUP
REFERENCE NO. 87-04- 2 DATE 29/11/87 GMT 22:12
POSITION 50- 0.0 N 145- 0.0 W STATION MP26
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	7.98	32.527	0	25.361	262.4	7.98	262.4	0.00	0.00	6.19	1480.
10	8.00	32.528	10	25.358	262.7	8.00	262.5	0.26	0.01	6.22	1480.
20	7.98	32.528	20	25.361	262.6	7.98	262.3	0.53	0.05	6.19	1480.
31	7.95	32.537	31	25.373	261.7	7.95	261.2	0.82	0.13	6.17	1480.
51	7.92	32.551	51	25.388	260.5	7.91	259.7	1.34	0.35	6.03	1480.
76	6.58	32.644	76	25.644	236.3	6.57	235.3	1.97	0.76	5.61	1476.
103	5.41	33.303	102	26.308	173.5	5.40	172.3	2.50	1.24	4.05	1472.
128	5.17	33.656	127	26.614	144.6	5.16	143.2	2.90	1.71	3.41	1472.
153	4.96	33.735	152	26.701	136.6	4.95	134.9	3.25	2.21	3.20	1472.
179	4.69	33.774	178	26.762	131.0	4.68	129.1	3.60	2.81	2.98	1471.
204	4.54	33.792	203	26.792	128.3	4.52	126.2	3.93	3.44	2.86	1471.
256	4.31	33.847	254	26.861	122.2	4.29	119.7	4.57	4.95	2.84	1471.
306	4.12	33.903	304	26.925	116.4	4.10	113.6	5.18	6.68	2.38	1471.
408	4.00	34.002	405	27.016	108.6	3.97	104.9	6.32	10.84	1.49	1472.
510	3.83	34.101	506	27.112	100.3	3.79	95.8	7.39	15.83	0.95	1473.
611	3.63	34.181	606	27.195	93.0	3.59	87.8	8.36	21.40	0.63	1474.
813	3.22	34.298	806	27.327	81.3	3.16	75.2	10.12	34.12	0.39	1476.
1015	2.91	34.378	1005	27.419	73.3	2.84	66.3	11.67	48.58	0.34	1478.
1221	2.64	34.397	1208	27.458	70.1	2.56	62.6	13.14	65.30	0.45	1480.
1530	2.32	34.501	1513	27.568	60.4	2.22	52.0	15.16	93.58	0.64	1484.
2063	1.93	34.584	2038	27.666	52.0	1.79	42.5	18.17	148.46	1.38	1491.
2551	1.70	34.626	2517	27.717	47.7	1.52	37.5	20.60	205.67	2.05	1499.
3054	1.57	34.654	3009	27.749	45.5	1.34	34.2	22.95	272.71	2.70	1507.
3560	1.52	34.681	3504	27.775	44.2	1.24	31.4	25.23	349.58	2.95	1515.
4074	1.50	34.679	4005	27.775	45.3	1.17	31.1	27.52	438.75	3.15	1524.
4177	1.50	34.679	4106	27.774	45.6	1.16	31.0	27.99	458.61	3.19	1526.
4280	1.50	34.692	4206	27.785	45.0	1.15	30.0	28.46	478.66	3.20	1528.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	7.98	32.527	0	25.361	262.4	7.98	262.4	0.00	0.00	6.19	1480.
10	8.00	32.528	10	25.358	262.7	8.00	262.5	0.26	0.01	6.22	1480.
20	7.98	32.528	20	25.361	262.6	7.98	262.3	0.53	0.05	6.19	1480.
30	7.95	32.536	30	25.372	261.7	7.95	261.3	0.79	0.12	6.17	1480.
50	7.92	32.550	50	25.387	260.6	7.92	259.8	1.31	0.33	6.04	1480.
75	6.65	32.639	75	25.632	237.5	6.64	236.5	1.93	0.73	5.63	1476.
100	5.51	33.244	99	26.249	179.0	5.51	177.8	2.46	1.19	4.19	1472.
125	5.19	33.620	124	26.583	147.6	5.18	146.1	2.86	1.66	3.48	1472.
150	4.98	33.726	149	26.691	137.5	4.97	135.9	3.21	2.15	3.23	1472.
175	4.73	33.768	174	26.753	131.9	4.72	130.0	3.55	2.70	3.01	1471.
200	4.57	33.789	199	26.787	128.8	4.55	126.7	3.87	3.33	2.88	1471.
225	4.44	33.815	223	26.822	125.7	4.43	123.4	4.19	4.01	2.85	1471.
250	4.33	33.841	248	26.854	122.8	4.32	120.4	4.50	4.77	2.84	1471.
300	4.14	33.897	298	26.917	117.1	4.12	114.3	5.10	6.45	2.43	1471.
400	4.01	33.995	397	27.009	109.2	3.98	105.5	6.23	10.47	1.55	1472.
500	3.85	34.092	496	27.103	101.0	3.81	96.6	7.28	15.30	0.99	1473.
600	3.65	34.173	595	27.186	93.7	3.61	88.6	8.26	20.76	0.66	1474.
700	3.44	34.237	694	27.258	87.4	3.39	81.8	9.16	26.75	0.51	1475.
800	3.24	34.291	793	27.320	82.0	3.19	75.9	10.01	33.22	0.40	1476.
900	3.08	34.335	892	27.370	77.7	3.02	71.1	10.81	40.12	0.37	1477.
1000	2.93	34.373	990	27.413	73.9	2.86	66.9	11.56	47.46	0.35	1478.
1200	2.66	34.395	1188	27.455	70.4	2.58	62.9	13.00	63.52	0.44	1480.
1500	2.35	34.492	1484	27.559	61.3	2.25	52.9	14.98	90.78	0.62	1484.
2000	1.97	34.575	1976	27.656	52.9	1.83	43.5	17.84	141.57	1.30	1491.
2500	1.72	34.622	2467	27.712	48.2	1.54	37.9	20.36	199.33	1.99	1498.
3000	1.58	34.651	2957	27.746	45.7	1.36	34.5	22.71	265.17	2.64	1506.
3500	1.53	34.678	3445	27.772	44.4	1.26	31.7	24.97	340.01	2.92	1514.
4000	1.50	34.680	3933	27.775	45.2	1.18	31.1	27.19	425.02	3.12	1523.
4100	1.50	34.679	4031	27.775	45.4	1.17	31.1	27.64	443.72	3.16	1524.
4200	1.50	34.682	4128	27.777	45.5	1.15	30.8	28.10	463.00	3.19	1526.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2.00
4.00
6.00
8.00
10.00
SALINITY, 0/00
30.50
31.50
32.50
33.50
34.50
35.50
TEMPERATURE, C
1.00
4.00
7.00
10.00
13.00
16.00
DEPTH, METRES
X10
X100
X1000
5
6
7
8
9
1
2
3
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7
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9
1
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1
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✳ - 87 - 4 - 3

OCEAN PHYSICS GROUP
REFERENCE NO. 87-04- 3 DATE 30/11/87 GMT 7:30
POSITION 50- 0.0 N 145- 0.0 W STATION MP26
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	7.96	32.515	0	25.354	263.0	7.96	263.0	0.00	0.00	6.61	1480.
10	7.96	32.519	10	25.357	262.8	7.96	262.7	0.26	0.01	6.62	1480.
20	7.92	32.530	20	25.372	261.6	7.92	261.3	0.53	0.05	6.63	1480.
30	7.91	32.541	30	25.382	260.8	7.91	260.3	0.79	0.12	6.61	1480.
50	7.88	32.564	50	25.404	259.0	7.88	258.2	1.31	0.34	6.63	1480.
75	7.84	32.872	75	25.651	235.9	7.83	234.6	1.94	0.74	6.63	1481.
101	5.41	33.092	100	26.141	189.2	5.40	188.1	2.48	1.21	5.88	1472.
126	5.38	33.565	125	26.518	153.8	5.37	152.3	2.91	1.71	4.97	1473.
151	5.18	33.742	150	26.681	138.6	5.17	136.8	3.27	2.23	4.19	1473.
176	4.92	33.759	175	26.724	134.7	4.91	132.7	3.62	2.80	3.69	1472.
201	4.64	33.773	200	26.766	130.8	4.62	128.7	3.95	3.44	3.27	1471.
252	4.31	33.817	250	26.837	124.4	4.29	122.0	4.59	4.92	2.52	1471.
302	4.17	33.870	300	26.893	119.4	4.15	116.6	5.21	6.66	1.96	1471.
404	4.01	34.036	401	27.042	106.2	3.98	102.4	6.36	10.80	1.24	1472.
505	3.83	34.091	501	27.104	101.0	3.79	96.5	7.40	15.62	0.86	1473.
607	3.63	34.173	602	27.189	93.5	3.59	88.4	8.39	21.25	0.73	1474.
809	3.25	34.282	802	27.312	82.8	3.19	76.6	10.17	34.06	0.57	1476.
1009	2.93	34.365	999	27.407	74.5	2.86	67.5	11.73	48.53	0.41	1478.
1257	2.60	34.450	1244	27.504	66.0	2.51	58.2	13.47	68.58	0.48	1481.
1555	2.28	34.503	1538	27.573	59.9	2.17	51.5	15.35	95.41	0.69	1484.
2053	1.94	34.575	2028	27.658	52.7	1.80	43.3	18.22	148.24	1.42	1491.
2561	1.70	34.616	2526	27.709	48.5	1.52	38.2	20.78	208.57	2.07	1499.
3083	1.57	34.646	3038	27.743	46.1	1.34	34.7	23.26	279.82	2.65	1507.
3613	1.51	34.657	3556	27.756	45.9	1.23	33.2	25.71	363.17	2.90	1516.
4128	1.51	34.667	4058	27.764	46.5	1.17	32.0	28.09	457.16	3.09	1525.
4231	1.50	34.667	4158	27.765	46.6	1.15	31.9	28.57	477.51	3.14	1527.
4334	1.49	34.669	4258	27.767	46.5	1.13	31.6	29.04	498.39	3.16	1528.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	7.96	32.515	0	25.354	263.0	7.96	263.0	0.00	0.00	6.61	1480.
10	7.96	32.519	10	25.357	262.8	7.96	262.7	0.26	0.01	6.62	1480.
20	7.92	32.530	20	25.372	261.6	7.92	261.3	0.53	0.05	6.63	1480.
30	7.91	32.541	30	25.382	260.8	7.91	260.3	0.79	0.12	6.61	1480.
50	7.88	32.564	50	25.404	259.0	7.88	258.2	1.31	0.34	6.63	1480.
75	7.84	32.872	75	25.651	235.9	7.83	234.6	1.94	0.74	6.63	1481.
100	5.46	33.087	99	26.131	190.2	5.46	189.1	2.46	1.20	5.90	1472.
125	5.38	33.551	124	26.507	154.8	5.37	153.3	2.89	1.69	4.99	1473.
150	5.19	33.735	149	26.675	139.1	5.18	137.4	3.26	2.21	4.22	1473.
175	4.93	33.758	174	26.722	134.8	4.92	132.9	3.60	2.77	3.72	1472.
200	4.65	33.772	199	26.764	131.0	4.64	128.9	3.93	3.40	3.29	1471.
225	4.48	33.795	223	26.801	127.6	4.46	125.3	4.25	4.10	2.89	1471.
250	4.32	33.816	248	26.834	124.6	4.30	122.2	4.57	4.87	2.54	1471.
300	4.18	33.868	298	26.891	119.6	4.15	116.8	5.18	6.58	1.98	1471.
400	4.02	34.030	397	27.036	106.7	3.99	102.9	6.31	10.61	1.27	1472.
500	3.84	34.088	496	27.101	101.2	3.80	96.8	7.35	15.35	0.87	1473.
600	3.64	34.168	595	27.183	94.0	3.60	88.9	8.32	20.84	0.74	1474.
700	3.44	34.227	694	27.250	88.2	3.39	82.6	9.24	26.87	0.65	1475.
800	3.27	34.278	793	27.307	83.2	3.21	77.1	10.09	33.42	0.58	1476.
900	3.10	34.322	892	27.358	78.8	3.03	72.2	10.90	40.43	0.49	1477.
1000	2.94	34.362	990	27.404	74.8	2.87	67.8	11.67	47.86	0.41	1478.
1200	2.67	34.432	1188	27.484	67.8	2.59	60.2	13.09	63.81	0.46	1480.
1500	2.33	34.494	1484	27.562	61.0	2.23	52.7	15.01	90.21	0.65	1484.
2000	1.97	34.568	1976	27.650	53.4	1.83	44.1	17.94	142.45	1.35	1491.
2500	1.73	34.612	2467	27.704	49.0	1.55	38.8	20.49	200.96	2.00	1498.
3000	1.59	34.642	2957	27.738	46.5	1.37	35.3	22.88	267.87	2.57	1506.
3500	1.52	34.655	3445	27.753	45.9	1.25	33.5	25.19	344.32	2.85	1514.
4000	1.51	34.665	3933	27.762	46.3	1.19	32.3	27.49	432.53	3.05	1523.
4100	1.51	34.666	4031	27.764	46.5	1.18	32.1	27.96	451.68	3.08	1524.
4200	1.50	34.667	4128	27.765	46.5	1.16	31.9	28.42	471.35	3.13	1526.

APPENDIX I

Abridged Cruise Report

OCEAN STORMS Cruise I (87-2)
(22 September - 16 October 1987)

Scientific Staff

S. Tabata, Chief Scientist
R. Bigham (Ocean Physics Division, I.O.S.)
B. Minkley (Ocean Physics Division, I.O.S.)
J. Love (Ocean Physics Division, I.O.S.)
L. Spearing (Ocean Physics Division, I.O.S.)
R. Bellegay (Ocean Chemistry Division, I.O.S.)
F. Whitney (Ocean Chemistry Division, I.O.S.)
T. Soutar (Ocean Chemistry Division, I.O.S.)
W.E. Bradley (NCAR, U.S.A.)

Ship

CRV Parizeau
J. Anderson, Master

Summary of Log (Times in PDST (+7), 1987

21 September: Load
22 September: Depart Esquimalt after fueling
Stations: JF01, JF02, JF03, JF04-samples underway
23 September: Stations: P01, P02, P03, P04, casts for chemistry, A05, A04
24 September: Stations: A3B, A02, A1B, A01, A0B, A00, P04, P05, P06, P07, P08
25 September: Stations: P09, P10, P11, P12, P13, P14
26 September: Stations: P15, P16, P17, P18
27 September: Stations: P19, P20, P21, P22, P23
28 September: Stations: P24, P25, P35, P26 (Station P)
29 September: Casts for chemistry, etc.; rendezvous with "T.G. Thompson"; Launched AES Meteorological drifting buoy (#5316/5311P); Retrieved/deployed sediment traps; Station P27;

In Ocean Storms Area

30 September: Stations: OS01; launched drifter #7989
OS02; " " #7995 (damaged and lost), #7994
OS03; " " #7958, thermistor chain #10061
OS04; " " #7946, thermistor chain #10063

1 October: Stations: OS05; " " #7985
OS06; " " #7951

1 October:	Stations:	OS12;	" " #7922
		OS18;	" " #7984
		OS24;	" " #7961
2 October:	Stations:	OS30;	" " #7978 (very high winds, gusting 50 knots)
		OS29;	" " #7947
		OS28;	" " #7968, thermistor chain #5637 (French)
		OS27;	" " #7953, thermistor chain #10060
		OS26;	" " #7988
3 October:	Stations:	OS25;	" " #7937 (winds subsided to 15 knots)
		OS19;	" " #7962
		OS13;	" " #7949
		OS07;	drifter not released (saved for later deployment)
		OS08;	drifter not released (saved for later deployment) (Winds up to 70 knots)
		OS09;	launched drifter #7979, thermistor chain #10064
		OS10;	" " #7948, thermistor chain #5633 (French)
			(Winds subsided to 15 knots)
5 October:	Stations:	OS11;	launched drifter #7930
		OS17;	" " #7993
		OS23;	" " #7972
6 October:	Stations:	OS22;	" " #7974, thermistor chain #10062
		OS21;	" " #7977, thermistor chain #10065
		OS20;	" " #7965
		OS14;	" " #7924
		OS15;	" " #7971
		OS31 (OS16W);	" " #7992
		OS34 (OS16H);	" " #7928
7 October:	Stations:	OS33 (OS16E);	" " #7996
		OS32 (OS16S);	" " #7957
		OS16;	" " #7943
		OS37 (OS16NE);	" " #7987
		OS36 (OS16SE);	" " #7970
		OS35 (OS16SW);	" " #7975
		OS38 (OS16NW);	" " #7959
		OS08;	(no STP; previously taken) launched drifter #7981
		OS07;	(no STP; previously taken) launched drifter #7945

Out of OCEAN STORMS area

8 October:	Stations:	P26; launched Hermes drifter #1401F (1332); retrieved sediment traps
		P33; launched Hermes drifter #14DB9 (1334)
		R20
9 October:	Stations:	R19
		R18; launched LCD drifter #1310
		R17; deployed NEPCS mooring #2 (51° 00.04'N/140°35.0'W)
		R16; LCD #3115 launched
10 October:	Stations:	R15;
		R14; LCD #1316 launched
		R13
		R12; 4 drifters launched in one-mile square LCD #1317, Tristar #1188, LCD #1318; Tristar #1197
		R11
11 October:	Stations:	R10; launched LCD #1319 Deployed NEPCS mooring #1 (52°00.0'N/136°00.0'W)
		R09
12 October:	Stations:	R08; launched Tristar drifter #1186
	Stations:	R07; R06; J05; J04; J03; J2A
13 October:	Stations:	J02; J1A, J01; J00; M88, I03, M89
14 October:	Stations:	H05; G05; F05; E05; D06
15 October:	Stations:	P06, A05, A04, A3B, A03 (P06), A2B, A02, A1B, A01, A0B, A00 Underway samples at JF04, JF03
16 October:	Stations:	Underway samples at JF02, JF02 Arrived I.O.S. jetty; unload and disembark

Legends for Appendices II and IV

Con. No.	Consecutive number (in chronological order of STP and hydrographic casts).
Stn. No.	Designated station identification number. The I.O.S. Line P - Station P and associated lines have local designation symbol M before station number but this is not printed.
Date:	Year, month, day.
Time:	Time in Universal Time Coordinate (UTC), formerly G.M.T.
STP:	Salinity-temperature-pressure cast - approximate maximum sampling depth in pressure units (decibar) is indicated.
Hydro.:	Hydrographic cast - approximate maximum sampling depth in pressure units (decibar) is indicated.
SSS:	Sea surface salinity from samples collected underway at depth of 3 metres via the ship's seawater loop system.

APPENDIX II

LOG OF OCEANOGRAPHIC OBSERVATIONS

CRUISE I (87-2)

CON. NO.	STN. NO.	DATE			TIME	STP	HYDRO	SSS	REMARKS
	JF01	8	09	23	0016	-		x	
	JF02			23	0221	-		x	
	JF03			23	0355	-		x	
	JF04			23	0535	-		x	
1	P01			23	0741	125		x	
2	P02			23	0941	100		x	
3	P03			23	1112	800		x	
4	P04			23	2300	-	1250	x	
4	P04			23	2347	1200			
5	A05			24	0302	2000		x	
6	A04			24	0522	2000		x	
7	A3B			24	0712	1200		x	
8	A2B			24	0909	400		x	
9	A02			24	1008	175		x	
10	A1B			24	1103	125		x	
11	A01			24	1152	75		x	
12	A0B			24	1234	50		x	
13	A00			24	1311	15		x	
14	P05			24	2004	2000		x	
15	P06			24	2304	2000		x	
6	P06			25	0048		2000		
16	P07			25	0338	2000		x	
17	P08			25	0653	2000		x	
18	P09			25	1004	2000		x	
19	P10			25	1305	2000		x	
20	P11			25	1603	2000		x	
21	P12			25	1908	2000		x	
22	P13			26	0019	2000		x	
23	P14			26	0518	2000		x	
24	P15			26	1045	2000		x	
25	P16			26	1615	2000		x	
25	P16			26	1748		3500		
26	P17			27	0020	2000		x	
27	P18			27	0548	2000		x	
28	P19			27	1112	2000		x	
29	P20			27	1605	2000		x	
30	P21			27	2054	2000		x	
31	P22			28	0138	2000		x	
32	P22			28	0607	2000		x	
33	P24			28	1037	2000		x	
34	P25			28	1505	2000		x	
35	P35			28	1849	2000		x	

CON. NO.	STN. NO.	DATE			TIME	STP	HYDRO.	SSS	REMARKS
36	P26	8	09	29	0035	2000		x	Station P
37	P26			29	0418		4300	x	
37	P26			29	0811	2000		x	
37	P26			29	0918		4300	x	
38	P27			30	0526	2000		x	
39	OS01			30	1432	1500		x	
40	OS01			30	1851	2000		x	
41	OS03			30	2329	1500		x	
42	OS04	8	10	01	0425	1500		x	
43	OS05			01	0843	1500		x	
44	OS06			01	1233	2000		x	
45	OS12			01	1709	1500		x	
46	OS18			01	2224	1500		x	
47	OS24			02	0308	1500			
48	OS30			02	0739	1500		x	
49	OS29			02	1233	1500			
50	OS28			02	1731	1500		x	
51	OS27			02	2230	1500		x	
52	OS26			03	0358	2000		x	Nutrient samples
53	OS25			03	0915	1500		x	taken from loop system
54	OS19			03	1313	1500		x	concurrently with SSS.
55	OS13			03	1721	1500		x	Continued to end of cruise
56	OS07			03	2051	2000		x	
57	OS08			04	0052	2000		x	Winds up to 53 knots.
57	OS08			04	0236		4000		Hove to.
58	OS09			05	0238	1500		x	
59	OS10			05	0644	1500		x	
60	OS11			05	2013	1500		x	
61	OS17			06	0100	1500		x	
62	OS23			06	0502	1500		x	
63	OS22			06	0856	1500		x	
64	OS21			06	1242	1500		x	
65	OS20			06	1653	1500		x	
66	OS14			06	2108	1500		x	
67	OS15			07	0126	1500		x	
68	OS31(16W)			07	0346	500		x	
69	OS34(16N)			07	0559	500		x	
70	OS33(16E)			07	0814	500		x	
71	OS32(16S)			07	1050	500		x	
72	OS16			07	1248	1500		x	
73	P26			08	1558	2000		x	Station P
74	P33			09	0157	2000		x	
75	R20			09	0500	2000		x	
76	R19			09	0833	2000		x	
77	R18			09	1230	2000		x	
78	R17			09	1705	2000		x	
79	R16			10	0544	2000		x	

CON. NO.	STN. NO.	DATE	TIME	STP	HYDRO.	SSS	REMARKS
80	R15	8 10 10	1021	2000		x	
81	R14	10	1354	2000		x	
82	R13	10	1739	2000		x	
82	R13	10	1936		3500		
83	R12	11	0037	2000		x	
84	R11	11	0516	2000		x	
85	R10	11	0910	2000		x	
86	MOR2	11	1446	2000		x	Mooring station
87	R09	12	0530	2000		x	
88	R08	12	0918	2000		x	
89	R07	12	1253	2000		x	
90	R06	12	1634	2000		x	
91	J05	12	2044	2000		x	
92	J04	13	0001	2000		x	
93	J03	13	0306		2000	x	
93	J03	13	0347	2000			
94	J2A	13	0533	2000		x	
95	J02	13	0724	2000		x	
96	J1A	13	0932	1500		x	
97	J01	13	1125	500		x	
98	J00	13	1212	80		x	
99	88	14	0017	1500		x	
100	I03	14	0303	1500		x	
101	89	14	0551	1500		x	
102	H05	14	0845	1500		x	
103	G05	14	1224	1500		x	
104	F05	14	1607	1500		x	
105	E05	14	2020	1500		x	
106	D06	15	0040	2000		x	
107	P06	15	0751	2000		x	
108	A05	15	1224	2000		x	
109	A04	15	1440	2000		x	
110	A3B	15	1628	1500		x	
111	A03	15	1744	1200		x	
112	A2B	15	1912	450		x	
113	A02	15	2009	175		x	
114	A1B	15	2056	135		x	
115	A01	15	2139	85		x	
116	A0B	15	2217	60		x	
117	A00	15	2257	20		x	
	JF04	15	0437	--		x	
	JF03	16	0623	--		x	
	JF02	16	0820	--		x	
	JF01	16	1010	--		x	

APPENDIX III

Abridged Cruise Report

OCEAN STORMS Cruise II (87-4)
(24 November - 9 December 1987)

Scientific Staff:

L. Spearing, Chief Scientist
B. Minkley (Ocean Physics Division, I.O.S.)
D. Yelland " " "
R. Bellegay (Ocean Chemistry Division, I.O.S.)
F. Whitney " " "
W. Trentin " " "
(Contractor, Oceanetic Measurement Ltd.)
D. Engomoen (Atmospheric Environment Service)
T. Duffy " " "

Ship

CRV Parizeau
P. Frost, Master

Summary of Log (times in P.S.T. (+8), 1987

23 November:	Load
24	Depart I.O.S. Stations: JF01, JF02, JF03, JF04 (samples underway) Stations: P01, P04, Casts for chemistry at P04, sediment trap experiment; A05, A04, A3B, A03 (P04), A2B, A02, A1B, A01, A00
26	Stations: Underway samples at P05, P06, P07, P08, P09, P10, P11
27	Stations: Underway samples at P12, P13, P14, P15, P16, P17
28	Stations: Underway samples at P18, P19, P20, P21, P22
29	Stations: Underway samples at P23, P24, P25, P35, P26 STP and hydro. casts at P26
30	Stations: Continue obs. at P26 (winds SE 45 knots) Depart (14:30) for OCEAN STORMS area
1 December:	Stations: OS01, OS02
2	Stations: OS03, OS04, OS05, OS06, OS12, OS11
3	Stations: OS10, OS09, OS08, OS07, OS13
4	Stations: OS14, OS15 Winds up to 50 knots E; (Hove to) at 09:00 Winds up to 70 knots SE by 1300 Maximum winds of 75 knots S at 15:00 OS16W at 20:45

5 December:	Stations:	OS16W, OS16N OS16 (unable to occupy station - too rough sea) (Hove to) AES drifter (ID5321/5326D launched) at 47°14.3N, 139°22.2W) Commence steaming toward P16 (reported drifting of sediment trap at P04).
6 December:	Stations:	Arrive P16 (12:20) Hove to; winds still up to 45 knots SW. (14:15 weather forecast not promising 45 knots winds to continue for at least 2 days): Searched for drifting sediment trap in Queen Charlotte Sound. Ship decided to head home via Inland passage.
8 December:		Proceed to IOS
9 December:		Arrive IOS (winds 40 SE in Strait of Georgia)
10 December:		Unload.

APPENDIX IV

LOG OF OCEANOGRAPHIC OBSERVATIONS

CRUISE III (87-4)

CON. NO.	STN. NO.	DATE	TIME	STP	HYDRO	SSS	REMARKS
	JF01	87 11 24	2247			x	Nutrient samples taken from
	JF02	25	0132			x	ship's seawater loop system
	JF03	25	0359			x	concurrently with SSS.
	JF04	25	0610			x	
1	P01	25	0846	100		x	
	P03	25	1230			x	
2	P04	25	1738	1200		x	
1	P04	25	1906		1300		
3	A05	25	2313	1500		x	
4	A04	26	0140	2000		x	
5	A3B	26	0338	1500		x	
6	A03	26	0523	1200		x	
7	A2B	26	0653	450		x	
8	A02	26	0757	150		x	
9	A1B	26	0850	130		x	
10	A01	26	0937	85		x	
11	A0B	26	1016	60		x	
12	A00	26	1101	40		x	
	P05	26	1909			x	
	P06	26	2110			x	
	P07	26	2321			x	
	P08	27	0128			x	
	P09	27	0331			x	
	P10	27	0532			x	
	P11	27	0729			x	
	P12	27	0928			x	
	P13	27	1330			x	
	P14	27	1731			x	
	P15	27	2130			x	
	P16	28	0200			x	
	P17	28	0643			x	
	P18	28	1126			x	
	P19	28	1555			x	
	P20	28	2009			x	
	P21	29	0028			x	
	P22	29	0417			x	
	P23	29	0816			x	
	P24	29	1217			x	
	P25	29	1602			x	
	P35	29	1849			x	
1	P26	29	2212		4300		Station P
13	P26	30	0456	2000			
2	P26	30	0730		4300		Winds up to SE 45 knots

CON. NO.	STN. NO.	DATE	TIME	STP	HYDRO.	SSS.	REMARKS
14	P26	87 11	30	1030	2000		
15	OS01	87 12	02	0206	1500	x	
16	OS02		02	0559	2000	x	
17	OS03		02	1026	1500	x	
18	OS04		02	1424	1500	x	
19	OS05		02	1819	1500	x	
20	OS06		02	2224	2000	x	
21	OS12		03	0243	1500	x	
22	OS11		03	0642	1500	x	
23	OS10		03	1132	1500	x	
24	OS09		03	1608	1500	x	
25	OS08		03	2041	1500	x	
26	OS07		04	0134	1500	x	
27	OS13		04	0541	1500	x	
28	OS14		04	0952	1500	x	
29	OS15		04	1411	1500	x	Winds up to 70 knots. Hove to.
30	OS31(16W)		05	0454	240	x	
31	OS31(16W)		05	1004	500		
32	OS34(16N)		05	1235	500	x	Unable to occupy station due
	OS16					x	to rough seas.